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Contents

The KANSAS Anthropologist
Journal of the Kansas Anthropological Association

KANSAS ANTHROPOLOGICAL ASSOCIATION

The Kansas Anthropological Association is the oldest amateur archeological organization in the state. Its membership is made up of individuals and institutions interested in the prehistoric and historic peoples of the area. The objectives and goals of the Association are the preservation and interpretation of archeological and ethnographic remains within the state; the scientific study, investigation, and interpretation of archeological remains and ethnographical materials; the publication and distribution of information concerning Kansas archeology and ethnology; and the development and promotion of a greater public interest and appreciation for the heritage of the state.

Types of memberships and dues:

Individual	$22.00	Subscription	$25.00
Family	$25.00	Life	$400.00
Contributing	$30.00	Student	$5.00

Applications for membership and dues should be addressed to the treasurer at the address listed below. Memberships begin on January 1, and annual dues are payable at that time. Students may join for $5.00 from June through August of each year; this enables them to attend the annual training program, but it does not include publications.

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President: Jean Howell, H-Bar Ranch, 90244 Southwest 130th Avenue, Coats, KS 67028-9441 (316) 893-2362

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Editor: Virginia A. Wulfkuhle, 6425 Southwest 6th Avenue, Topeka, KS 66615-1099 (785) 272-8681 ext. 268

Immediate Past President: Ken Sherraden, 760 South Broadway, Salina, KS 67401 (785) 823-4551

PUBLICATIONS

In 1997 members will receive at least four issues of the *Kansas Anthropological Association Newsletter* (ISSN 1069-0360) and two issues of *The Kansas Anthropologist* (ISSN 1069-0379), the Association's journal. All members and interested individuals, professional or amateur, are invited to submit material to the editor for use in these publications. Back issues of the journal or newsletter, if available, may be ordered from the Historian-Recorder at the address listed above. Prices will be furnished upon request.

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"WHEN I WAS A LAD, I SERVED A TERM ..." MINOR ADVENTURES IN PLAINS ARCHEOLOGY IN THE 1950S AND 1960S

Roger T. Grange, Jr.
Professor Emeritus, University of South Florida

The Kansas Anthropologist 18(1):1-20

Personal experiences in the upper Missouri and central Plains are described. The author worked with Carlyle S. Smith of the University of Kansas in 1951, 1952, 1953, and 1955 at sites in South Dakota. He directed excavations at various sites in Nebraska while on the staff of the Nebraska State Historical Society from 1955 to 1964.

My careers in anthropology and archeology began in 1949 and have continued beyond my formal retirement in 1994. I use the plural because at various times I have focused on four different areas of research interest and professional activities, although they have all been inter-related, overlapping and more or less continuous as well. One career has been in museology as a staff member in anthropology at the Field Museum in Chicago and in various roles from curator to museum director at the Nebraska State Historical Society (NSHS) in Lincoln. A second employment career was 30 years of teaching and academic administration at the University of South Florida where I served as a Professor, Department Chairman, and graduate program Archaeology Track Leader. My archeological research has encompassed two separate but parallel and overlapping tracks in Plains archeology and in historical archeology. Field expeditions have been enlivened by being robbed, flooded, hailed, burned, tornadoed, and bombed.

GETTING STARTED

As a child I found an arrowhead or two and had a modest diet of walking mummies in movies, but that was less exciting than seeing the real thing in museums. I grew up in Chicago and spent a lot of time in the Art Institute, the Museum of Science and Industry, and the Field Museum (then the Chicago Natural History Museum). I always thought museums were pretty neat places but never dreamed then that they would become a substantial part of my career.

I spent a year in general junior college courses and a lot of engineering, but my interests changed when I went to the College of the University of Chicago (UC) in 1945 during the Robert Maynard Hutchins era. I was drafted at the tag end of the war and spent a year in the Army, then returned to UC and graduated in 1948. In the later part of my undergraduate studies, I was into geology and would have continued there had it not been for an elective course "Introduction to Anthropology." All of the faculty participated in discussion lectures. Who would not have been inspired by a course taught by Robert Redfield, Sol Tax, Fred Eggan, Sherwood Washburn, Robert Braidwood, Kenneth Orr, Norman McQuown, and guests like Theodosius Dobzhansky? They all talked about the current hot stuff. For example, Washburn's "new physical anthropology" was brand new, Braidwood was just back from Jarmo, and the invention of radiocarbon dating was announced in class. After that course there was never a question about a career in anthropology for me.

My first experience in archeological field work came when several graduate students asked for volunteers to help dig an Indian mound about to be destroyed in a park development. I had just been reading about Hopewell mounds and envisioned something of really impressive size. We walked out into a field and reached a point where everyone stopped and put down their tools. I hadn't learned to shut up and observe at that point, so I asked, "Where is the mound?" "You're standing on it" was the reply. Well, 4 inches wasn't 40 feet, but it was OK with me. I found my first human burial that day—nicked it at nasion with a shovel, I am sorry to say, but then no one expected it to appear just barely below the surface.

In the summer of 1949, I went on the University of Chicago field school at Starved Rock State Park in Illinois. It was directed by Kenneth Orr with Robert Braidwood as a two-week substitute. Braidwood regaled us with stories of the hardships at Jarmo, such as being two weeks from a supply of sherry. The undergraduates worked on various excavation projects, directed by graduate students, including Mike Fowler, Bill Mayer-Oakes, and Elaine Bluhm (Herold). I worked for Elaine and thought it was normal for women to have careers in archeology. I found out otherwise and think I have done my bit to help change that in later years. Our field camp was shared by Dick

Hagen, who was excavating LaSalle's fort on Starved Rock, so I thought digging at Historic period sites was normal too, but it was some years before that became fully true.

During the summer of 1950, I volunteered to work at the Anthropology Department at the Field Museum. The following year I had a job as assistant in the department and continued at the museum until I completed my M.A. in 1952. Paul Martin, George Quimby, and Donald Collier taught several anthropology courses for the UC, so I went to class more or less on the job and ended up spending more time at the museum than on campus. *Indians Before Columbus* had just been published, and the new innovative style museum gallery of the same name had been so impressive that Mr. Stanley Field wanted all of the anthropology exhibits redone ASAP.

George Quimby was working on a series of new Plains ethnology exhibits, and my job was to find artifacts in the storerooms, remove specimens from exhibits, clean things, rearrange storage, and serve as a general dog's body. I got to play with the goodies from the Plains and all over the world as well. It was fabulous training. George found several original George Catlin paintings in one of the museum collection storerooms, and I assisted him in sorting them out. They were original Catlins, duplicates of others but done by Catlin, which we demonstrated because they were signed by the artist on the back of the frame. These were pre-Xerox days, so it was my task to trace the signatures to make it easier to compare them with other sources. I could almost forge Catlin's writing. This was my first personal experience with Plains ethnohistorical materials.

I had started an M.A. thesis at the University of Chicago, attempting an analysis of some uncatalogued materials from several cave sites in northern Mexico, but it proved impossible to correlate the incomplete field notes on provenience with the uncatalogued artifacts. Paul Martin, Chief Curator of Anthropology at the Field Museum, extricated me from that disaster and arranged for me to do the analysis of the wooden artifacts from Tularosa and Cordova caves, which he had just finished excavating. My M.A. thesis became a chapter in the site report. I contributed to some of the other chapters, and this was my first archeological publication (Martin, Rinaldo, Bluhm, Cutler, and Grange 1952).

TO THE PLAINS AT TALKING CROW

I had written a detailed paper on Plains archeology in a class taught by George Quimby and acquired an interest in the area. I was looking for some archeological field work for the summer of 1951, and George arranged for me to go with Carlyle Smith (1992) to the Talking Crow site on the Creek Reservation at Fort Thompson, South Dakota. I had been through South Dakota once on a family vacation, but Talking Crow was my first real experience with the Plains, and it was far different from Chicago (Figure 1). I don't fully understand my own continuing fascination with the Plains. I was on Carlyle's crew in 1951 (the summer we had a flood and had to move specimens and gear to the top of a nearby hill for a couple of nights) and then was his Field Assistant in 1952, 1953, and 1955 at Talking Crow, Spain, and Two Teeth sites. This was my apprenticeship in archeological field work, and our friendship was life long. It was my honor to make the presentation of the Harrington Medal to Carlyle at the Society for Historical Archaeology meeting in 1990.

We camped adjacent to the site, which belonged to a Sioux man, Bill Voice, who was lots of fun and very helpful to us. He had a big Buick that he drove all over the plains, herding his cattle. We had several tents and a big fly tarp in front of the cook tent for shelter over our dining table (Figure 2). We built a Dakota-style sunshade, covered with branches and leaves as well (Figure 3). Our shower was a sun-heated 55-gallon drum up on a log tower (Figure 4). During construction Al Johnson managed to bury a hatchet in his knee and required a trip to the hospital in Chamberlain for repairs. The Indian boys on the crew named him Chops His Knee.

Carlyle's lifelong hobby was collecting and restoring firearms, and he always brought at least one to the field and gave the crew instructions and personal experience in firing flintlocks or other weapons. The only gun I ever owned was a Sharps carbine that I bought on the reservation. It was an authentic weapon from the Indian wars, and I later donated it to the NSHS when I was a curator on the staff. In later years Carlyle had a small cannon and could bracket logs floating in the Missouri River.

Bill Voice invited the crew up to his place for dinner one night. Those who went said the main course was a pretty good stew, although the flavor was a bit strong. Carlyle and I were always suspicious about the menu, but perhaps it was only coincidental that Bill's big yellow dog was never seen again.

Since we were on the reservation and there were several Indian boys on the crew, the field season had some elements of an ethnographic field trip. We went on a number of weekend trips, one to the Rosebud Reservation to see a big summer dance. It was

Figure 1. The author during his first season at the Talking Crow site in 1951.

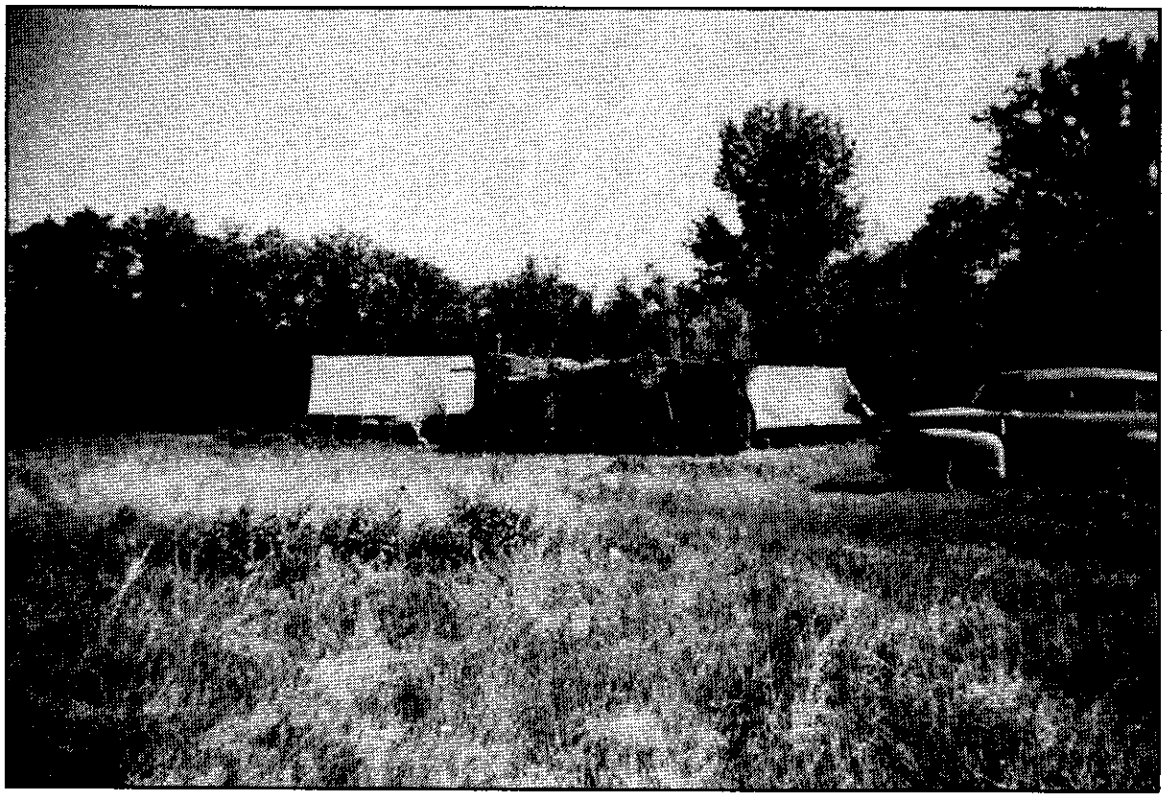

Figure 2. Field camp at the Talking Crow site in 1952.

Figure 3. A lazy Sunday at the Talking Crow site camp in 1951. Carlyle Smith is reading in center. Grange's "medicine bundle" hangs on the pole at left.

Figure 4. The shower at the Talking Crow site camp in 1952.

fascinating to me, since I had been working with Plains materials at the Museum and had never been on a reservation before.

There was always something to do. We worked in the field five days a week and spent Saturday morning in camp doing lab work in exchange for our transportation to Chamberlain for a weekly visit to Roger's Bar (its real name), shops etc. Among my amusements one summer was the creation of my personal medicine bundle. The "sacred" items in it included some mileage records Carlyle had lost; he had to arrange a ceremonial bundle opening at Roger's Bar to recover his documents.

Sundays were lazier days, although we often went out surveying for new sites or to visit other sites and excavations. One notable camp amusement was building a 1-inch to 1-foot scale model of House 8, which we were excavating at the time. It turned out to be a very instructive exercise; for example, some of the house posts in the original were at slightly irregular distance intervals around the perimeter of the house. Our efforts to find and cut lintels to fit led to an understanding that if one had a long lintel, it would have been far easier to place the support post to fit than to find or cut a lintel to fit. One might see this as early mini-experimental archeology. Carlyle really got into our house model project and photographed every stage of construction (Figure 5). Ultimately, we burned the model and excavated it. Carlyle wrote the whole project up, and it was eventually included in *The Archaeologist at Work* (Smith 1959).

Carlyle always brought his Bannerman's catalogue to the field. Bannerman's sold military surplus from the Revolutionary War onwards, and we conned all of the crew, including the Indian boys, into buying surplus Spanish American War pith helmets (Figure 6). As Field Assistant, I was allowed to wear mine with a decorative spike and had a yellow horsehair plume for really important events, like a Smithsonian inspection visit. A National Geographic Society party, traveling up the Missouri River doing a story on Lewis and Clark, stopped at the site. We are illustrated in all our helmeted glory in the June 1953 issue (Gray 1953).

Another memorable visit was a three- or four-day stop by a truckload of University of Kansas zoologists, trapping small rodents in an ecological study. They lived a lot rougher than we archeologists because they never set up a real camp with any facilities, and they didn't make much use of ours. They were skinning, cleaning, and taking intestinal samples from their quarry and thought nothing of just wiping their hands on their only pair of jeans before sitting down for lunch. They dried skulls strung on wires hanging over the truck engine block, and their favorite gig was asking an unsuspecting filling station attendant to "check the oil, please."

It was an exciting day when Ralph Solecki's (1994) plane buzzed us when making his air photo flight to Talking Crow. Other visitors were frequent, as there was a lot of weekend travel by all of the River Basin Surveys field parties. It was an essential part of doing archeology during a period when each new site revealed a new culture, new pottery types, and new architectural features. Listening in on the discussions of these issues among Robert Cummings, Bob Newman, Marvin (Gus) Kivett, Carlyle Smith, G. Hubert Smith, Waldo Wedel, Wes Hurt, Alan Woolworth, and Don Lehmer, singly or in groups, was a major part of my education in Plains archeology (Figures 7-9). Woolworth and G. H. Smith were working on historic sites, such as Smith's Like-A-Fishhook Village, and in later years Gus excavated Fort Atkinson. These represent an often forgotten Plains phase in the early development of historic sites work. One time so many of the field parties ended up in the Silver Spur Bar in Pierre, South Dakota, at the same time that we called it the "Accidental Plains Conference." It came to be an intentional annual event in mid-field season.

George Metcalf was a particularly enjoyable visitor. George was the quintessential modern mountain man, displaced a century and a half too late. He slept on the ground with his blankets wrapped in a piece of greasy waterproofed canvas and entertained with his vast repertoire of funny and rude songs.

Carlyle was the one of the few archeologists in the Missouri basin who included wives or, rarer still, women on his field crew, so we always provided superior sanitary facilities. During our travels we compared fixtures with those at other field camps, and I remember one site where Wedel's outhouse was memorable. There was no roof and only two vertical poles supporting a sheet of canvas as a privacy screen on the camp side. The remainder consisted of a slit trench and a nearly stable plank seat, supported by two posts. It was a bit precarious but afforded a most magnificent view of the Missouri River valley.

Gus and Carolyn Kivett were camped a few miles from Talking Crow, digging the Crow Creek site. With its long rectangular houses it was quite different from Talking Crow. We tried to teach Kivett's toddler Ron to say, "Nebraska is a good state, but Kansas is better," but he wouldn't do it. Gus had a tractor and scoop pan for removing the overburden from the deeply buried houses, a mechanized version of the WPA mule and pan that he and A. T. Hill used in Nebraska. Other River Basin Surveys parties were using drag lines, road patrols, and a host of other power machines, sweet-

Figure 5. The model earth lodge, getting the Cecil B. DeMille treatment at the Talking Crow site in 1952. Carlyle Smith is kneeling at the model; on-lookers are Randy Weeks at far left, Karl Heider with the white helmet, and Franklin Fenenga and Ray Wood at center.

Figure 6. Excavating House 8 (the original of the model) in 1952 with crew members in Spanish-American War pith helmets. At left the author wears the helmet with the spike.

Figure 7. Field conference at Waldo Wedel's dig at 39St1 in 1951. From left to right are two unknown boys, Don Lehmer, Waldo Wedel, Carlyle Smith, an unknown man, Douglas Jordan, and another unknown man.

Figure 8. Field conference in 1952. From left to right are Carlyle Smith, Franklin Fenenga, and Ray Wood.

Figure 9. Carlyle Smith and Don Lehmer discussing the nuances of Talking Crow and Stanley wares. Al Johnson looks on.

talked from the dam construction companies. These were the projects in which the application of power equipment became an established part of the archeologist's tool kit.

At Talking Crow we used only muscle power. One year Carlyle planned the excavations to cross section the entire site and excavated two long trenches, one 400 feet long and the other at right angles over 200 feet long. Both were designed to avoid the obvious surface depressions, marking house locations, so as to sample the activity areas outside of the houses. At one end of the 400-foot trench, I discovered three house floors in stratigraphic sequence, and we had to move the biggest dirt pile on the site to expose the location. It was, as usual, near the end of the field season, so I really had to push the crew to get it done. They presented me a bull whip with commemorative silver ID on the handle, and this was long before Indiana Jones. Such clear stratification was extremely important in understanding the site and proved to be especially significant at Talking Crow because the earliest structure was a square Central Plains-style house rather than the round houses of later periods at the site (Smith 1977).

The excavations were done using arbitrary excavation levels for removing sod and cross sectioning deep features, like the fortification ditch, and stratigraphically defined excavation for units, such as house floors, storage pits, post molds. The search for stratified features was constant, and they often appeared during excavation. For example, the post pattern of one house appeared to be oval, and we first thought it might be a new house type but soon demonstrated that it was two overlapping stratified structures. These provided data for the framework for seriation of a series of sites in the area (Smith 1963), a significant goal when establishing culture history and chronology, which was one of the major problems in the area.

Remote sensing during the period was relatively primitive. Air photos were the primary tool available and earth lodge villages showed up well on such pictures. This, coupled with a settlement pattern model that identified terraces above the river valley and below the surrounding high plains as primary village locations, served quite well. It was often more difficult to figure out how to get to a potential terrace site than it was to predict site locations. Local informants were also vital.

Remote sensing on site was largely a matter of the archeologists' experience in visual detection of house rings, cache pit depressions, fortification ditches, and mounds along with associated surface finds. One mound at Talking Crow had been unobserved until the last of the four seasons at the site, when I was running from one end of the site to the other several times a day to supervise the crew and began a new shortcut route. After a few days of this, I realized there was a barely

perceptible low mound that we hadn't seen. It proved to be an especially rich refuse midden.

Another example of "primitive remote sensing" was in a house where we thought we had finished excavation of the floor. I was cleaning up postmolds in preparation for final photography when I noticed an area where flies congregated repeatedly. At that point there was no visible stain or feature on the floor, but a bit more troweling revealed the mouth of a storage pit—still attracting flies! Carlyle assigned me the task of excavating the pit, and it proved to be a large bell-shaped cache. It was still full of surprises for there was the mouth of a second pit in the bottom. This proved to be another large bell-shaped cache, and the total depth of the double pit feature was 13 feet. It was very cool inside the pit, making it a pleasant place to work. I had to have an assistant with a rope and bucket to remove dirt and me. I could only get out unaided when Thane Robinson would throw a handful of dirt on me and yell, "Cave in," at which times I set an unequaled vertical leap record.

During this period all of the Plains field parties used some version of the extension ladder method to get vertical photos of house floors and other site features (Figure 10). Two holes were dug to stabilize the bottom rails of the ladder, which was held up vertically with three guy ropes tied from the top to substantial iron fence stakes. Our rule was, "If you climb it, you tie it." We frequently went up the ladder during excavation to search for post patterns and features not readily visible from the house floor level. A ladder, placed in the right relationship to the excavated house at the right time of day to control shadows, provided excellent near vertical pictures of the large houses. It was my job to take a lot of these photos, and I usually went up the ladder one handed with two or three 35-mm cameras around my neck and a Speed Graphic in the other hand. Imagine the thrill I experienced one day when the top rung of the aluminum ladder came out in my climbing hand! I was saved by a clutch clutch.

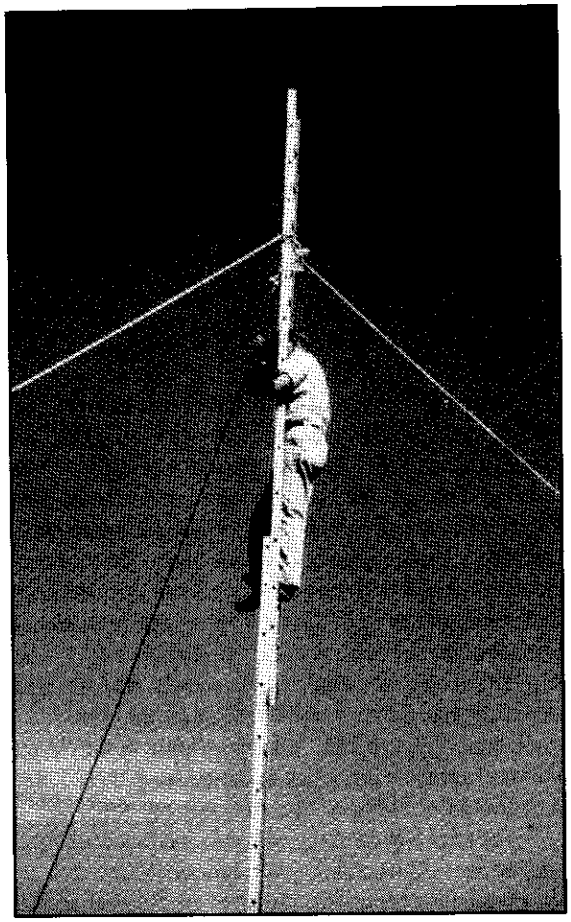

Figure 10. Carlyle Smith half way up the ladder at the Talking Crow site in 1951.

ARIZONA

After completing my M.A. at the University of Chicago in 1952, I went to the University of Arizona to earn my Ph.D. I continued to work in the Plains (an oddity at the University of Arizona) in the summer field season as Carlyle's assistant. At Arizona my major professor was Emil Haury. One spring vacation he took a group of graduate students back to the Naco Mammoth site. Our job was to extend the excavations in search of charcoal samples for dating. Doc Haury had arranged for a county power shovel to remove the overburden from the site, and then we had to dig through a layer of caliche so hard that a pick would bounce and barely dent it. We were working up slope in search of the hearth at the butchering site and picked tiny fragments of charcoal from the occupation surface. We didn't reach the hearth but did recover more of the mammoth and enough charcoal for ^{14}C dating. We camped at the site in the open and ate dinner on the Mexican side of the border town where Doc Haury could feed us for less. The sleeping bags iced up at night, but we went to sleep warmed by a swig from a bottle of Tequila passed around by Julio Cesar Cubillios.

Television was newly introduced in Tucson, and the national program from the University of Pennsylvania Museum, "What in the World," was very popular. The local station needed hometown programming and did a spinoff with the Arizona State Museum called "What Is It?" Weekly, Doc Haury would take four graduate students to the studio and bring out artifacts, selected from the museum

collections in real secret. Our only clue was a cryptic one like, "The topic tonight will be Treasures from the Earth." We went on live and made some mistakes but got most of them right. It was fun being recognized as a TV star in local stores! It was good training for me; later at the NSHS in Lincoln, I was on the weekly museum TV program periodically, and at Fort Robinson I had a weekly radio program on KCSR about local history and archeology.

BACK TO THE PLAINS: THE SPAIN SITE

Summers I went back to the Plains to work for Carlyle, and in 1953 we began excavation on a site that turned out to be a historic period log cabin. We finished that site quickly and shifted to the Spain site, which was located by talking to Abraham Spain, who reported a "pottery factory" on his land. The site was unusual because it was a winter village, located on a sheltered lower terrace. There were several houses and a refuse midden, which was the "pottery factory." The deposits were so thick with sherds that it was impossible to force a shovel through the matrix in some areas (Figure 11). The excavation of the Spain site was especially important to me because there I met Jane Randolph Whitner, who became my wife.

The season at the Spain site was one that found the University of Kansas field party housed in fine style in an abandoned farm, scheduled to be flooded in the reservoir but not yet demolished. Carlyle and his family had rooms in the house as did the female members of the expedition. I bunked on the porch, and the rest of the male crew slept in the barn. The guest quarters were a cot set up on a non-functional bathtub in the house. The star attraction that season was our shower. We had hot running water rather than the usual 55-gallon sun-heated drum. We diverted a stream from a small natural hot spring to a flume, projecting over a cutbank, put down some planks for a floor, and erected a canvas privacy screen. It was an absolute luxury to have as much hot water as you wanted instead of competing for lukewarm, then cold, water from the shower barrel. Camp that year was such an improvement over our usual tent accommodations that we were prompted to put up a sign over the farm entrance gate, which said "It Costs No More To Go First Class" (Figure 12).

After that field season I stayed on at the University of Kansas in Carlyle's lab for a few weeks, doing the analysis and writing the description of the artifacts. My efforts ended up in our joint report, which was my first publication in Plains archeology (Smith and Grange 1958).

I finished my Ph.D. course work in 1954 and went back to Chicago to work as an Assistant in Anthropology at the Field Museum. My primary task was the organization of a gigantic new storage room for Pacific materials. The facility was created by taking one basement exhibition gallery out of service. We lived in poverty while I finished some of my Arizona Ph.D. requirements in absentia.

I went back to the Plains as Carlyle's assistant again to excavate the Two Teeth site in 1955. That year we were housed in the Fort Thompson school in a real building. Gus Kivett was still excavating nearby, which was fortunate for me because he was looking to fill a new staff position, and I was hired by the NSHS as curator of the newly established Fort Robinson Museum.

FORT ROBINSON, NEBRASKA

We moved to Lincoln, and I spent the first winter doing research on Fort Robinson. Gus Kivett, Museum Director, and the whole staff worked on the project. I designed special exhibit cases and planned most of the exhibits for the fort museum. Gus had introduced the new style of museum exhibits in the museum in Lincoln, a style which largely emanated from the innovative "Indians Before Columbus" displays that Martin, Quimby, and Collier had introduced at the Field Museum. I began to really appreciate the value of my training there.

The Fort Robinson Museum was the first branch museum established by the NSHS. It was 550 miles away from Lincoln—about the same distance as Chicago! The exhibits we developed began with Plains environment, included western Nebraska archeology, a big series on Plains Indian ethnology, and the remainder on the Indian Wars and Fort Robinson.

Ray Price and Iris Daugherty were the museum artists in Lincoln, and we made a great team. All of the displays were built in the lab that first winter, and then Ray and I took them out to Fort Robinson to complete installation of specimens. The exhibit cases were manufactured in Lincoln in the State Prison and trucked out to the fort near Crawford in western Nebraska. When they arrived, we discovered that we had forgotten one critical height measurement—we couldn't get the larger cases up the stairway. Oops! Luckily at the fort there was an old army crane, which was used primarily at a USDA Beef Cattle Research Station, so we were able to remove a window and hoist the cases upstairs. That was the only hitch we encountered.

Figure 11. The author and Carlyle Smith at the Spain site in 1953. More funny hats are in view; this time a British 8th Army Desert Corps and Carlyle's Afrika Korps.

Figure 12. Jane Whitner and the author at the Spain site in 1953 under the famous camp sign.

Jane and I moved into the house that came with the job, an officers quarters built in 1909. It was a gigantic three-story brick building with lots and lots of room for our total possessions of about six pieces of furniture. When our side of the duplex had been renovated, the architect advised oil heat to replace the inoperable coal stoker. We didn't pay rent, but we did have to buy our own fuel oil. In January, when it was 30 degrees below zero for most of the month, we went through over 1,000 gallons of oil and more than our pay in 30 days. We paid an oil bill all year long.

Fortunately, we didn't spend every winter there, because the museum was closed for the season. We moved back to Lincoln one year and went on leave another winter to go back to Tucson, so I could prepare for and take my final Ph.D. exams.

The USDA Beef Cattle Research Station was constantly modifying facilities at Fort Robinson. One day I heard the roar of bulldozers and rushed out to see that they were modifying the Soldier Creek channel, so that cattle could be driven under the highway bridge. I managed to get a couple of days to carry out a salvage excavation of the first hospital at Camp Robinson in 1874. It was a small dugout in the bank of Soldier Creek. The medicine bottles and other materials were quickly incorporated into a new museum exhibit.

The NSHS had control of the site of the Red Cloud Indian Agency at the fort. I spent one winter working on document research and then, with one digger, did sufficient excavation to identify key points and depressions on the site, so they could be marked for interpretation. I did a lot of research on the buildings and history of Fort Robinson as well, and these projects sparked my interest in historical archeology.

I worked with local people, especially Howard Dodd, who took me to record various prehistoric sites in the badlands area north of Fort Robinson (Grange 1964b, 1964c). Together we found the site of the last battle between Fort Robinson soldiers and the Cheyenne in the Cheyenne outbreak (Grange 1964a), using my data from the historical documents and Howard's knowledge of the Pine Ridge. The curatorial work at Fort Robinson included considerable historical research (Grange 1958b, 1963b), as well as museology (Grange 1956, 1958a).

I was promoted to curator of anthropology, moved to the main museum in Lincoln, and plunged back into salvage archeology in the Red Willow Reservoir.

RED WILLOW RESERVOIR

During the 1962 season in the Red Willow Reservoir, there was a terrible hail storm with the proverbial grapefruit-sized hail. The storm actually stripped off the siding and demolished some buildings in the area. Our camp survived, but our personal car (the first brand new car my wife and I had owned) lost its windows and acquired a dimpled surface. It was too dented to repair, so we took the insurance money and learned to love the texture.

The Red Willow Reservoir near McCook, Nebraska, was a two-season project, but both were short in time and crew size. A River Basin Surveys project had been done and found some significant sites. When construction of the dam was scheduled, the NSHS got a contract to carry out salvage excavations. Gus Kivett was busy with museum administration, so I, as curator of anthropology, was to do the field work. Gus and I went out for a brief planning look at the situation that I would be facing. We determined that the most critical site was Spring Creek (25Ft31) on the terrace that would be the primary borrow pit for the earth fill dam. Our testing revealed excellent stratification at the site, with a Dismal River period occupation being the most recent and an underlying Upper Republican component. We also noted a deeply buried stained layer, which we thought was probably an early occupation, but didn't find any associated artifacts.

The plan was to start salvage work on that terrace before borrow pit operations began. However, a relatively mild winter allowed construction schedules to be advanced, and when I arrived on the site the following spring, both the Dismal River and Upper Republican occupation layers had been removed. I questioned the engineers and earthmoving equipment operators, who reported repeatedly finding "underground ovens." They had just exposed one; it was a hearth pit with associated bone (Figure 13). I was able to arrange for an area of the site to be bypassed in the borrow pit operation, and a D-21 operator made some passes over the site to expose a 50 x 50-foot area of the occupation zone. We left a thin cushion over it as protection. We began to recover Logan Creek points and other Plains Archaic materials, and this made the site very important. Our permission to dig in the midst of the dam excavations was on a day-to-day basis, but we managed to get a month to excavate this site before we were forced to move. We started in a depressed area, and the huge D-21 earthmovers ripped by periodically, coming close to the edge of our dig; at that point we were 10 feet below the equipment. They always seemed to shift gears, take a nasty skid, and laugh a lot just as they went past. Gradually they tore away the terrace until we were at their level, then we became an island above the field of work, and eventually we had to quit digging.

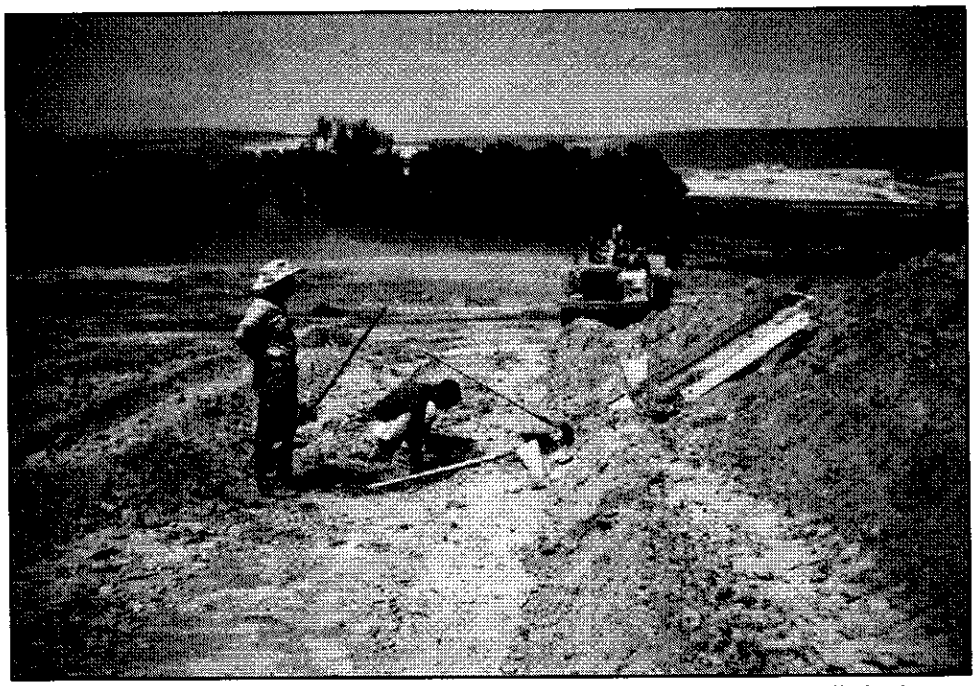

Figure 13. Spring Creek site (25Ft31) in 1961. The author and Jim O'Connell check out a fireplace exposed by borrow pit operations.

I only had 5 high school-age crew members, including Jim O'Connell, who was about 14 at the time. Jim was with me for years and is a well known archeologist. It was very hot that summer, some days up to 112 degrees, and I had the crew take periodic breaks in the only shade available—they rolled under the truck. We got a lot done on the site, but spot observations indicated that it once extended over nearly the entire terrace and had been an exceptionally large occupation area. The ^{14}C date of this site (5680 ± 160 B.P.; 3730 B.C. No.M-1364) fell within the altithermal and was an addition to knowledge about the Plains Archaic (Grange 1980).

The Spring Creek site was of major importance because the Archaic Period wasn't represented elsewhere in the reservoir. Digging 25Ft31 for a month meant that we had to sacrifice a number of other sites that we expected to excavate during the salvage operation. We were only able to excavate one Upper Republican house at 25Ft32 (Figure 14). The normal plan was to lay out cross trenches to locate the central fireplace and house wall edges. There were no visible surface contours at 25Ft32, so I used a few wattle and daub fragments to go on. The crew members were amazed when the fireplace appeared in the dead center square. I confess I did not explain that luck is a technical term in archeology.

We were also expected to complete the intensive survey of the reservoir, and our only choice was to do that after regular work hours or on weekend days. We went back for a second field season at Red Willow, excavated at several Upper Republican and Woodland sites, and surveyed the irrigation canal system. We dug one Woodland site as the reservoir waters lapped at the edges; some excavation units were taken away over night. We also had to have a bad weather site, since a rain would turn all of the local dirt track roads into such slippery loess mud that they were truly impassable. We excavated a Woodland village near our field camp on such days. It was outside the reservoir in an area scheduled for post-construction facilities. It was a fascinating site with houses and burials in house floors, and we had so much bad weather that we did a substantial amount of work (Grange 1980).

My wife Jane worked hard dealing with three children, doing the shopping and cooking for the whole crew, helping on survey, and making sure everything went well (Figure 15). One day when we returned from a mission, we found that a transient had robbed the camp, making off with a suitcase, clothes, and food.

The flooding of the reservoir drove wildlife into the surrounding area, and we had a lot of big (4+ feet) rattlesnakes in camp. We found one dangling over the baby's playpen one day. The crew usually skinned the snakes they killed for hat bands and tried rattler steak; once a season proved to be enough—at least with our recipe.

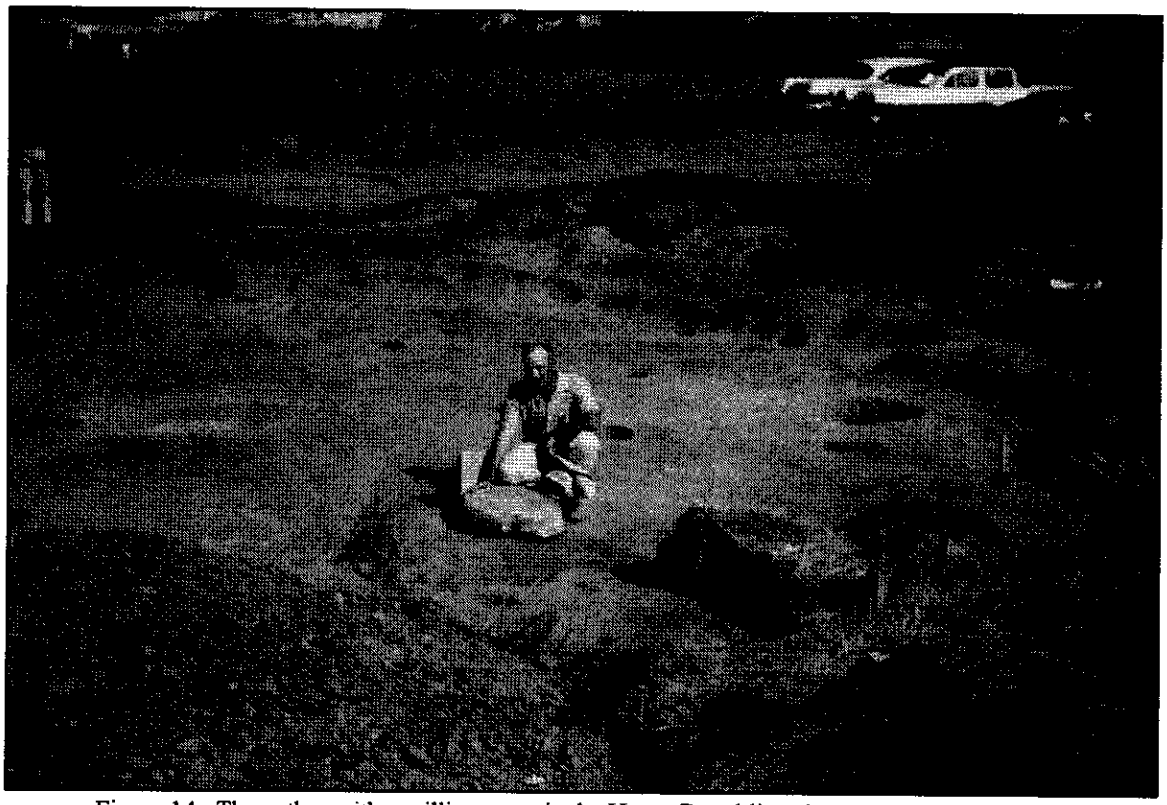

Figure 14. The author with a milling stone in the Upper Republican house at 25Ft32 in 1961.

Figure 15. The Spring Creek site (25Ft31) in 1961. Jim O'Connell is at left, Jane and Randy Grange at center are arriving with lunch, other Grange children, Roger III and Kathy, are at upper right.

We were usually 20 to 40 miles from potable water, and frequent runs to town to fill milk cans and jerry cans were necessary. We poured a bit of Clorox in to keep the cans sweet. Sometimes we had local water but couldn't use it. The first season in the Red Willow we had a small condemned house in addition to our trailer and tents for the crew. There was an outhouse on a rise directly above the well. It was like the model for the "how NOT to do it" illustration in my grade school health text. The former owners of the house had moved to McCook but hated city water, so while we went to town to get our water, they drove out to the field camp to get theirs!

Another season we were nearly burned out. We had a 6 x 6 x 6-foot garbage pit and used a bit of kerosene to burn the trash before we covered it each day. One crew member missed the pit when he dumped the garbage and then burned it right there on the surface at the edge of the pit—a not too brilliant move, considering the wind. The grass fire that ensued threatened our whole camp for a few minutes before we got it under control.

HISTORICAL ARCHEOLOGY: FORT KEARNY

The efforts of the NSHS in the early days of historical archeology aren't well known. Gus Kivett worked for several years at Fort Atkinson, which is now reconstructed as a state park. In 1960 and 1961 I excavated at Fort Kearny on the Oregon Trail as a NSHS project for the Park and Game Commission.

Excavations by an architect several years earlier had cut a series of cross trenches through the officers quarters, unfortunately obliterating most of the only building for which photos were available. Our goal was to test other areas of the site to clear them for park facilities buildings, as well as to examine the Civil War fortification and a few other features for the Nebraska Park and Game Commission (Grange 1963a). Today the park is well developed and has a museum, which includes a display on the field work that contains my picture, completing a cycle from curator to specimen!

We camped in the state park, which was then virtually undeveloped. One night we had a major line storm with torrential rain and high winds. It leveled all of the tents in camp, because the sandy soil of the Platte Valley didn't provide much stability for tent stakes and corner posts. We worked all day rebuilding camp, replacing broken 2 x 4 ridge poles, and putting in longer tent stakes. Exhausted, we sat down to dinner and had just finished eating when one of the crew said, "Hey, look at the funny cloud over there!" It was another line storm, and 15 minutes later camp was flattened again. This time a tiny twister had taken the top out of a tree and dropped two large limbs, one on each side of our brand new International carryall truck. Fortunately the branches missed the truck, only stripping off the extended side-view mirrors. We rebuilt camp again with even more heavy fence posts and guy ropes and escaped further storms that season. We were thankful that no one was injured in the adventure.

THE PAWNEE

The collections of the NSHS included a large quantity of materials from WPA excavations, including a lot of materials from the significant Pawnee sites. Little or nothing had been published about these sites, so I began my Ph.D. dissertation research—a ceramic analysis that Gus Kivett and I envisioned as the beginning of a long-term effort to deal with this backlog. The research wasn't funded as an "on the job" project, and we didn't have enough lab space at the museum to accommodate the project, so I worked at home at night. We were renting a small house in Lincoln, and I had to work in the basement, which wasn't heated. It also leaked, so I wore galoshes and a heavy coat, sitting there classifying sherds in the cold with water running up to my ankles.

I used ceramic seriation to arrange in temporal order the historic and protohistoric Pawnee sites in different localities. These could be linked to the four major Pawnee bands in the Historic period, thereby tracing the development of the bands back into protohistoric times (Grange 1968). In my study of the ceramics, I found solid evidence of the presence of Central Plains style cord-roughened pottery, similar to the Anoka Focus and other Upper Republican materials, as part of the Pawnee ceramic tradition in the earliest Lower Loup components. This was important because it was an element of the missing link between the protohistoric Pawnee and late prehistoric Central Plains Upper Republican cultures. Few if any of my colleagues accepted this evidence, and it is still a matter under some question.

LOGAN CREEK

In 1963 I was working at the Logan Creek site near Oakland, Nebraska (Figure 16). Lyle Stone was my field assistant that year. The Logan Creek site had been discovered by Gus Kivett, when he was inspecting the railroad cut exposure. He had carried out excavations at the site earlier, and I continued the project. Our camp was on the terrace in which the stratified occupational layers were buried. The railroad

Figure 16. Gus Kivett shooting an 8-mm movie at the Logan Creek site in 1963.

tracks curved as the line approached the railroad cut, and at night the train headlight would shine through our trailer, as the engine made the bend and entered the cut. It was a frequent reminder of the then popular song about "the railroad track ran through the middle of the house." Each morning just about dawn the early train went through, and the engineer always gave us a big wake-up whistle. At least everyone got up on time.

The crew went to town to swim when they could. We had a tall, incredibly handsome godlike Hawaiian on the crew, who was exceptionally popular with local girls, and this fostered a strong rivalry between the crew and the local boys. One night there were sounds coming from the railroad cut. The crew members headed down to see what was happening just as a bomb went off. It seemed to rain dirt and debris for hours, but fortunately no one was injured. As it turned out, one of the town boys had gotten into the local fireworks supply and made a bottle bomb as a joke. It rattled the windows in Oakland several miles away and shut down the Burlington Railroad until the track could be inspected. The railroad officials were not amused, and I had to testify in a court hearing.

Archeological field work was my summer occupation, and in the winter the focus was on museum exhibits. As curator of the Fort Robinson Museum and later as curator of anthropology at the NSHS museum in Lincoln, I put into practice what I had learned about museum exhibits at the Field Museum and the Arizona State Museum and from Gus Kivett at the NSHS. We did various museum seasonal exhibits and an annual elaborate show at the Nebraska State Fair. We also worked with the Lincoln Junior League in restoring William Jennings Bryan's home in Lincoln. Stratification of wall paint and some good photographs and the collections in the NSHS museum were all used in the project.

My Ph.D. was awarded in 1962, and I began a part-time moonlight job teaching an archeology course at the University of Nebraska. When Gus Kivett was appointed as director of the NSHS, I was promoted to museum director, and others began to do the archeological field work. I left Nebraska in 1964 for the University of South Florida (USF) in Tampa to take up a new career as a professor. I was the only anthropologist teaching in the anthropology program and was appointed chairman to establish the Anthropology Department, which grew as rapidly as I could hire additional faculty. I managed to include a small teaching exhibit gallery in the departmental facilities planned for a new building. It isn't a proper museum (although that is what it is often called), but it allowed me to offer a course in museum methods on a regular basis until my retirement.

THE PLAINS CONTINUED AT THE UNIVERSITY OF SOUTH FLORIDA

University faculty on academic year appointments are like migratory seasonal workers. My historical archeology experience, based on two Nebraska sites with "fort" in their names, led to summer contract projects with Parks Canada at Castle Hill in Placentia, Newfoundland, and Fort Lennox at Ste. Paul Ile-aux-Noix, Quebec, from 1965 to 1968. Historical archeology continued as my major research focus and summer field work for the Mackinac Island State Park Commission at Fort Michilimackinac in 1978, 1979, and 1983 (with Don Heldman) and Fort Mackinac on Mackinac Island in 1980, 1981, 1982, 1986, 1995, and 1996. I won't discuss these further in this paper.

I never lost my interest in Plains archeology. One element of method developed in historic sites archeology was ceramic formula dating, and I believe I was the first to apply this technique of seriation and dating to prehistoric materials in a paper, "Pawnee Potsherds Revisited" (Grange 1974, 1984). Carlyle Smith and I had often talked about a joint paper synthesizing Arikara archeology, but we never got around to the project. I made an effort in that direction, applying ceramic formula dating to Arikara prehistory, in a paper presented in a symposium honoring Carlyle after his retirement (Grange 1981).

In 1976 Waldo Wedel organized a symposium on Pawnee archeology at the U. S. National Museum, and I was honored to be invited to participate. Later we presented revised versions of our papers at the Plains Conference in Denver, and they were published in a special number of *Nebraska History*. I reviewed Pawnee archeology and included a study of Lower Loup social organization, based on ceramic design element associations in house contexts (Grange 1979).

I made a mini-return to more active Plains archeology in 1985, when the NSHS Foundation supported a small grant to begin working on the backlog of Pawnee sites. We selected the Hill site (25Wt1) or Pike-Pawnee Village as the initial target. Jane and I spent a month in Lincoln, working on the artifacts recovered by A. T. Hill and the 1941 WPA excavation of the site. This site, visited by Zebulon Pike in 1806, is an ideal one in which the continuum between prehistoric and historic period cultures and archeology can be examined.

Then in 1987 the NSHS Foundation funded a small USF field school at the site (Figure 17). We worked on determining limits of the occupation, assessing site damage by the agriculture lease used to support acquisition of the site, getting a personal understanding of the village stratigraphy, and applying water screening recovery techniques to find seed beads in the village area, where only one or two had been recovered in the past (Grange 1987, 1989, 1991).

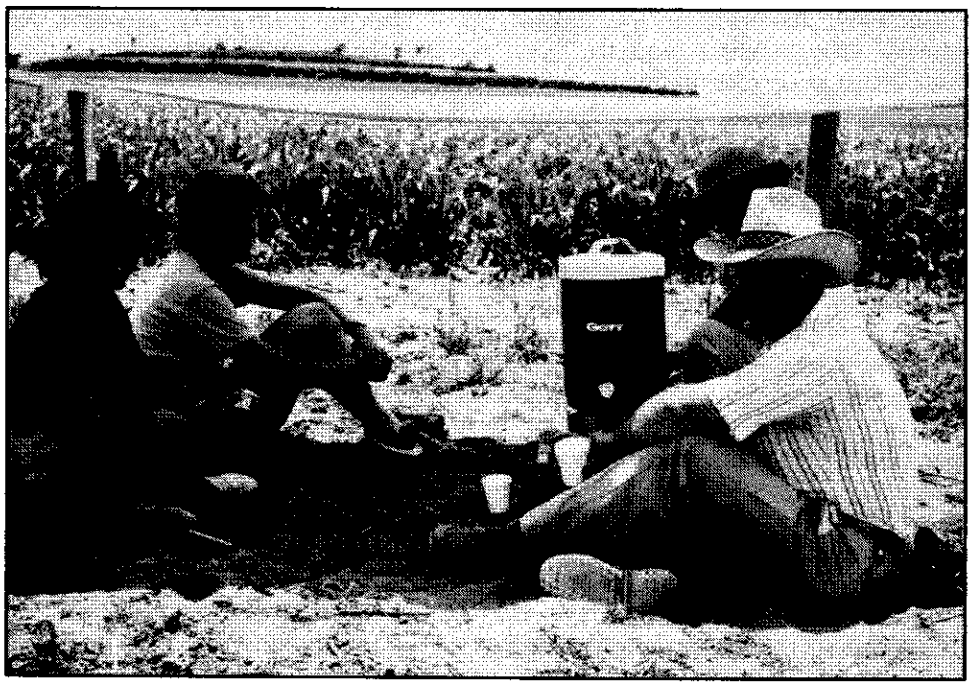

Figure 17. Shade break at the Pike-Pawnee Village (Hill site, 25Wt1) during the University of South Florida field school in 1987. From left to right are Judith Illyes, Patricia Carrender, Sandra McCue, and the author.

The Pike-Pawnee Village project was slowed during the enactment and implementation of the Nebraska legislation that led to the reburial of much of the material from this and the other Pawnee sites.

THE NEW AND THE OLD

Comparing Plains archeology of the 1950s with the present would reveal a great many differences. I will mention only a few of the more obvious items.

During the Missouri River salvage efforts, contractors and Smithsonian field parties were there to excavate as much of as many sites as possible as quickly as possible. We relied upon the sharp eyes of the excavators to spot pottery, stone tools, bones, and other artifacts. Crew members used shovels more than trowels, breaking up and inspecting the shovels of dirt before throwing them onto the dirt pile. Screening was usually confined to special features. We must have missed a great many tiny artifacts and smaller faunal and floral specimens, because water screening and flotation hadn't been added to the archeological tool kit. Those time-consuming methods would have limited the amount of work accomplished, and only a small fraction of the cultural resources could be investigated as it was.

House floors were cleaned off with sharpened shovels rather than trowels. When spading off the sod layer above an earth lodge floor, we were expected to throw, not carry or barrow, the spoil onto the dirt pile 20 feet or more away. The use of power equipment was relatively new. Although WPA crews in the Plains had used mule-drawn scoop pans, the regular use of heavy power equipment was a salvage archeology innovation that later spread to non-salvage field projects within the Plains and far beyond.

The analysis of archeological data has also changed a great deal since those days, both in method and theory. For example, we always measured and quantified the "waste flakes" and reported these data as evidence of flintknapping, but nothing like the detailed lithic analysis involving edge angles was common, if it existed at all, during the early River Basin Surveys days.

Data analysis was in transition from the presence and absence tables used in early McKern classification of components into foci and aspects to quantified tabulations. Conversion of the numerical counts to percentages for comparative purposes and for relative chronological seriation was state of the art, and Al Spaulding's demonstration of the application of then esoteric statistics, such as Chi square, to archeological data was the mind-boggling, cutting edge, hot stuff. We more often used pencil and paper than calculators, and slide rules were for adepts. The edge-punched card and needle sort method was pretty slick and could be run up at home with file cards, a hand punch, and a bit of a coathanger. These seem primitive methods today.

The early use of computers by William Longacre in the Southwest and James Deetz in the Plains involved the specialist computer wizards but opened the way to far more sophisticated multi-variate studies. My Plains mentor, Carlyle Smith (1992:68), was never entirely comfortable with these new techniques. I was self taught as mainframe and later desktop computing became possible at USF, but I always felt myself behind the curve of new technology and methods. I envy archeologists just starting out now with automatic transits, GPS, and other wonders.

There is a huge backlog of unreported archeological data. Only portions of the wealth of data excavated from Pawnee sites in Nebraska by the WPA projects have ever been published. The WPA (before my day) focused on labor intensive aspects of archeology, excavation and artifact processing, but not on publication and was terminated by World War II. After the war Plains archeology was aimed at the River Basin Surveys salvage program in which I began my own career in the Plains. Between the dam construction time schedules, funding cutbacks and shortages, once again the focus was on getting material from the ground, and reports were often delayed or provided in unpublished formats.

The river basin salvage pressures were quickly replaced by those of the highway salvage programs. At the NSHS we added a highway salvage archeologist to the staff. Initially there was so much field work that there was little time to convert the project manuscript reports to published format, although this was accomplished later. Soon after that the current period of cultural resource management and contract archeology began. This has increased administrative archeology and supports a lot of archeological work, but it has also produced a vast gray literature of unpublished reports.

Throughout my career the selection of sites and research problems was driven more by the need to rescue (to use the better British term) data rather than by archeological questions. Some archeological research questions do get addressed along the way, but there is a vast backlog of data yet to be utilized. More recently the state and federal NAGPRA legislation has brought another controlling perspective into operation, and some archeological collections have been reburied without complete analysis. Once again archeologists need to adapt their research to an entirely different set of external pressures.

When I was a student, archeologists in training acquired a good background in relevant ethnography. We struggled to get as many of the course offerings as possible, but this has changed. I find that many graduate students in archeology are poorly prepared. Some have never had a formal ethnology course like Indians of North America! A few others have had a course about modern American Indian problems, which included an introductory section on ethnography/ ethnohistory. When I first taught at USF, students paid tuition by the term and could take courses up to a reasonable limit. Then the legislature changed the system, and tuition has since been charged by the credit hour. Students were transformed instantly from maximum course takers to minimum consumers, and it has become increasingly difficult to increase academic program requirements. All this was perhaps good for the University budget but not good for maximum training of students.

In 1994, after 30 years of service, I retired from the University of South Florida and moved to New Smyrna Beach, Florida. I have a number of ongoing research projects, and when I am not surfing, I continue my research and data analysis on the Pawnee materials from the Plains and continue USF archeological field schools and research at Fort Mackinac.

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HEAT TREATMENT AND INTENDED TOOL FUNCTION AS SEEN FROM SHARPS CREEK

Susan E. Butler
University of Kansas

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Heat treatment is an intentional process used as a preparation technique for improving certain qualities in siliceous rock. John Reynolds of the Kansas State Historical Society has proposed that heat treatment can have an effect on intended tool function. This paper addresses this hypothesis statistically, using the lithic collection from the Sharps Creek site in central Kansas.

INTRODUCTION

The Sharps Creek site, 14MP408, is located in McPherson County near the western edge of the Flint Hills region of Kansas. This site is a large, well preserved protohistoric Wichita village of the Great Bend aspect and has been dated to post-European contact (Lees 1992). The village is notable as containing the only well preserved "council circle" feature remaining in Kansas. This circular earthwork and the surrounding mounds have provided numerous artifacts for study. The lithic tools provide a wealth of information that will allow us to understand the nature and reasons for heat treatment of various raw materials. This analysis is intended to illustrate a hypothesis, proposed by John Reynolds of the Kansas State Historical Society, that suggests a correlation between heat treatment, raw material, and intended function.

EXCAVATIONS AT SHARPS CREEK

In the 1880s J. A. Udden, a professor of geology at Bethany College in Lindsborg, excavated at Sharps Creek and nearby Paint Creek and found several artifacts, including fragments of chain mail and glass beads. These allowed for the dating of the site to European Contact times. His 1900 publication, *An Old Indian Village*, describes his work and his conclusions that these sites were perhaps ones visited by the Coronado expedition around A.D. 1541 (Conrad 1993).

In the late 1960s and early 1970s, avocational archeologists Harold and Margie Reed of Salina conducted limited testing at Sharps Creek. More formal excavations took place in 1992 and 1993 under the direction of the Kansas State Historical Society (KSHS) and the Kansas Anthropological Association (KAA). The artifacts used in this analysis are from the 1992 collection. These artifacts were recovered in the vicinity of two of several large, low trash mounds. The excavation was concentrated within a 40 x 40 m grid; thirty-seven 2 x 2m squares were opened in a checkerboard pattern. Fill was screened, and all cultural material was saved. Systematic sampling of levels for soil flotation from each excavation unit and of refuse-filled storage pits was maintained throughout in order to document the fill sequence (Reynolds 1994).

HEAT TREATMENT

Heat treatment is an intentional process used as a preparation technique for improving certain qualities in siliceous rock. Heat treatment was apparently practiced selectively by many different cultures and has both desirable and undesirable effects (Reynolds 1994). It makes low grade cherts more vitreous, and when knapped, the edges of these heat-treated stones are much sharper than similar edges of unheated, knapped stone of the same sources. This is a desirable effect if the goal is to make thin and very sharp implements. If, on the other hand, the goal is to make tough and durable tools, heat treatment should be avoided (Reynolds 1994). Other knappable lithic materials, like obsidian, are of such high grade that heat treatment is not needed or is not possible. Some materials, like certain sedimentary quartzites, are of such poor quality that they are not noticeably improved in flaking quality by heat treatment (Reynolds 1994).

HYPOTHESIS

Based on this information about heat treatment, Reynolds (1994) devised a hypothesis that essentially has two parts. It is expected that only a percentage of the lithic material from any one site will be heat treated and that this will relate both to the nature of the raw material and to the intended function of the planned

tools that were made from these materials. 1) There is a correlation between heat treatment and intended tool type. Furthermore, categories that require sharp and thin cutting edges, such as thin bifacial "knives" and projectile points, are more likely to have been heat treated than thick bifaces (inferentially used as choppers), scrapers, and drills. 2) The finest grades of lithic material found at the site are less likely to have been heat treated than the medium grade materials, and the poorest grades of material may also be untreated.

METHODOLOGY

Errett Callahan (1979:16) proposed a lithic grade scale of raw materials that are suitable for knapping. Callahan's scale was set up with obsidian graded as 1.0, indicating that it is one of the most workable of lithic raw materials. Coarse quartzites are graded as 5.0, indicating that they are very difficult to work with knapping strategies. Flints and cherts are then intermediate between these extremes, with grades typically ranging from 2.5 to 4.5. Thermal alteration of some flints and cherts can have the effect of raising the grade by 0.5 to 1.0, depending upon the material. For this scale it is necessary that an experienced knapper, who has worked with the various raw materials sufficiently, determine the grades for a fine scale comparison (Reynolds 1994). John Reynolds has had sufficient experience with the raw materials that are found at Sharps Creek; therefore, the following is his grade list for the 14MP408 lithic raw materials.

Table 1. Lithic Grade Scale.

Grade	Material	Source Distance
1.0	Obsidian (source not yet identified but presumed to be Sante Fe, New Mexico area)	600 miles
2.5	Heated Florence A (Kay County, Oklahoma)	115 miles
	Heated Alibates	300 miles
3.0	Alibates (Amarillo, Texas area)	300 miles
	Heated Tahlequah (northeast Oklahoma)	190 miles
	Smoky Hill Jasper (Gove and Trego counties, Kansas)	130 miles
3.5	Gray Permian (Flint Hills of Kansas)	30 miles
	Florence A (Cowley County, Kansas, and Kay County, Oklahoma)	115 miles
4.0	Tahlequah (northeast Oklahoma)	190 miles
4.5	Unidentified Quartzite	local

Note that heat treatment is not shown as an option for Smoky Hill jasper and Gray Permian chert. After considerable experimentation, Reynolds concluded that heat treatment, except at very low temperature, does not have a positive effect on Smoky Hill jasper. This stone is "softer" than most flints and cherts, and heat treatment attempts typically result in cracking and crazing with no gain in fracture quality. At this time Reynolds is uncertain if the Gray Permians, which are a mixture of both Florence and Wreford cherts, respond to heat treatment in a positive manner (Reynolds 1994).

ANALYSIS

The raw data for this analysis was collected by the KAA members during October 1992. All statistical tests were run using the program of Number Cruncher Statistical System (NCSS). For all tests a confidence level of 95 percent was chosen.

A stratified, random sampling technique was employed in this methodology. Almost 1400 lithic tools were recovered at the site during the 1992 excavations. Therefore, a sample had to be taken to ensure that the large (N) did not affect the statistical

outcomes. A 30 percent sample was taken from each tool type, according to whether it had been heat treated or not.

This analysis will begin with part one of Reynolds' hypothesis. This stated that there may be a correlation between heat treatment and intended tool type. As can be seen in Table 2, the chi-square test returned a value of 0.46. This indicates that there is not a statistically significant relationship between tool type and heat treatment.

Table 2. Chi Square Analysis of Tool Type and Heat Treatment.

	Not Heated	Heated	Total
Thin Bifaces	80	56	136
Thick Bifaces	5	2	7
Scrapers	9	5	14
Knives	13	7	20
Drills	18	10	28
Projectile Points	111	104	215
Total	236	184	420
Chi Square			df=5 P =0.4653

Part one of the hypothesis states that there may be another relationship. It states that tools that require sharper and thinner cutting edges are more likely to be heat treated than tools that require thicker, duller edges. For the category of thin, sharp edges, thin bifaces, knives, and projectile points were combined. For the category of thick, dull edges, scrapers, thick bifaces, and drills were combined. As can be seen in Table 3, this chi-square test returned an alpha value of 0.16. Again, this does not show a statistically significant relationship between the type of edge and heat treatment at a 95 percent confidence level.

Table 3. Chi Square Analysis of Edge Type and Heat Treatment.

	Not Heated	Heated	Total
Thin, Sharper Edges	133	116	249
Thick, Duller Edges	103	68	171
Total	236	182	420
Chi Square			df=1 P =0.1663

Part two of Reynolds' hypothesis asserts that the finest grades of lithic material found at the site are less likely to have been heat treated than the medium grade materials and that the poorest grades of raw material may also go untreated. Table 4 shows the quantities of heated and unheated tools by raw material types, using 100 percent of the excavated sample.

Table 4. Raw Material Types and Heat Treatment.

	Not Heated	Heated	Total
Obsidian	3	0	3
Alibates	28	1	29
Smoky Hill Jasper	68	3	71
Gray Permian	345	31	376
Florence A	103	318	421
Tahlequah	212	253	465
Quartzite	4	0	4
Total	763	606	1369

Table 5 illustrates the pattern of the grade of materials and whether they were heat treated or not. High grade material was designated as those above a 2.5 value. Medium grade material was designated from 2.5 to 4.0 values. Low grade material was designated as those below a 4.0 value. These two tables show that, as Reynolds predicted, the high and low grade materials are unlikely to be heat treated.

Table 5. Analysis of Raw Material Grade and Heat Treatment.

	Not Heated	Heated	Total
High/Low Grade	7	0	7
Medium Grade	756	606	1362
Total	763	606	1369

CONCLUSIONS

Based on this analysis, part one of Reynolds' hypothesis can not be supported statistically. However, this does not necessarily mean that the hypothesis is invalid. While statistical analysis is often helpful to detect patterning in artifactual assemblages, there are some limitations. Human behavior is much more complicated than an absolute dichotomy. There are gray areas to every argument. Therefore, it should be stated that human behavior cannot always be statistically proven. The ideas in this hypothesis are based on reasoning and experimentation. They are attributes that a modern knapper considers in the selection of raw material; prehistoric knappers may have had the same preferences.

High grade materials, such as obsidian, and lower grade materials, such as quartzite, are not generally heat treated. This observation has been tested experimentally, showing that heat treatment of these raw materials has a negative effect rather than a positive one. It would be very interesting to see if this practice also occurs at other Great Bend aspect sites.

With the data that has been collected from the Sharps Creek site, a number of other avenues for further research present themselves. Some questions include the following: 1) Were certain types of stone, particularly exotic materials, preferred for making certain types of tools? 2) Do breakage patterns reflect discard of materials possibly in a trash midden situation? 3) Does provenience information, tied into debitage and/or tool types, reveal activity areas within the site (Reynolds 1994)? 4) How do elements such as availability or durability of these raw materials affect selection? Anyone interested in further analyses should refer to Butler (1997), which addresses several of these issues.

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NOTES

THE STORY TOLD BY THE FLOTATION SAMPLES FROM FEATURE 454 AT THE SHARPS CREEK EXCAVATIONS OF 1992-1993

John Romine

The Kansas Anthropologist 18(1), 1997, pp. 27-33

The importance of flotation samples collected during the 1992 Kansas Archeology Training Program field school at the Sharps Creek site (14MP408) in northern McPherson County near the town of Lindsborg, Kansas, was demonstrated by the recovery of evidence of Coronado's presence in the area. A piece of a metal ring and broken pieces of a clay pipe were found in the heavy fraction from two different storage pits. The light fraction samples yielded more evidence of the daily activities of protohistoric Wichita Indians during the time when Coronado visited the surrounding countryside. At the end of the 1992 season, the field school cosponsors, the Kansas Anthropological Association and the Kansas State Historical Society, agreed to continue the excavation in 1993, mainly because of the wealth of information that was coming out of the storage pits and other features and the need to assess the situation more thoroughly.

INTRODUCTION

The Quivirans, also known as the Great Bend aspect or protohistoric Wichita Indians, have been studied for decades by professional and avocational archeologists and by students of archeology. In the early 1940s, when Waldo Wedel was working in Rice County at the Tobias, Thompson, Hayes, and other sites, he was informed of nearby sites in McPherson County, namely Paint Creek and Sharps Creek. Wedel (1959:541) did not have enough time to do any study other than some preliminary readings and comparison of materials collected from the surface of these two sites with items that had been found at the Thompson and Tobias sites.

In the years following Waldo Wedel's investigations, many new techniques (beyond careful excavation and dry screening) have been developed in an attempt to recover ethnohistorical and ethnobotanical remains. One such process is soil flotation, increasingly used in Kansas over the past 10 years.

For the last three years the author has been separating the samples of both the heavy and light portions of samples from the Sharps Creek site. In 1996 the author completed the heavy fraction separation and wrote a report for the Kansas State Historical Society (Romine 1996). Recently the author has begun the separation of the light fraction. The data from the heavy fraction stands alone, but adding the data from the light fraction allows comparative study that has proved of particular interest, giving a new perspective on the daily activities of the Quivirans. A profile drawing of storage pit Feature 454 (F454) has made it possible to add seasonality to the study.

METHODS

The Paint Creek and Sharps Creek sites were possible locations for the 1992 field school. A preliminary survey in early 1992 showed that Paint Creek had been virtually destroyed by a county road through the site, but Sharps Creek was ideal. In 1970 Harold and Margie Reed of Salina had completed a small scale excavation at Sharps Creek that yielded a number of interesting artifacts. The field school was carried out during the first two weeks in June 1992, but by the end of the two weeks, many questions still were unanswered. It was decided to continue in 1993.

By the end of the 1993 excavation, a total of 89, 2 x 2-m squares were opened, and 7 trash-filled pits were discovered. The site map (Figure 1) shows their locations. These pits were former storage pits for food stuffs, such as corn, beans, and squash. After rodents and other vermin entered these pits, they were then filled with refuse from everyday living.

From every 10-cm level of each excavation unit (x-unit), a 2-gallon soil sample was retained for the flotation process. A total of 370 samples were floated. The author has sorted all of the heavy fraction and a portion of the light fraction from these samples. Because the profile drawing of F454 (Figure 2) was available, efforts have been concentrated on the botanical remains from the light fraction of that feature.

The heavy fraction samples were sorted as to size with the use of a geology grain size sorter. The sorter has three screens: 2 mm, 1 mm, and .5 mm. The final tray caught the remaining dust, which was discarded. The 1 mm and .5 mm particles were glanced at briefly and put in polyethylene bags with identification tags,

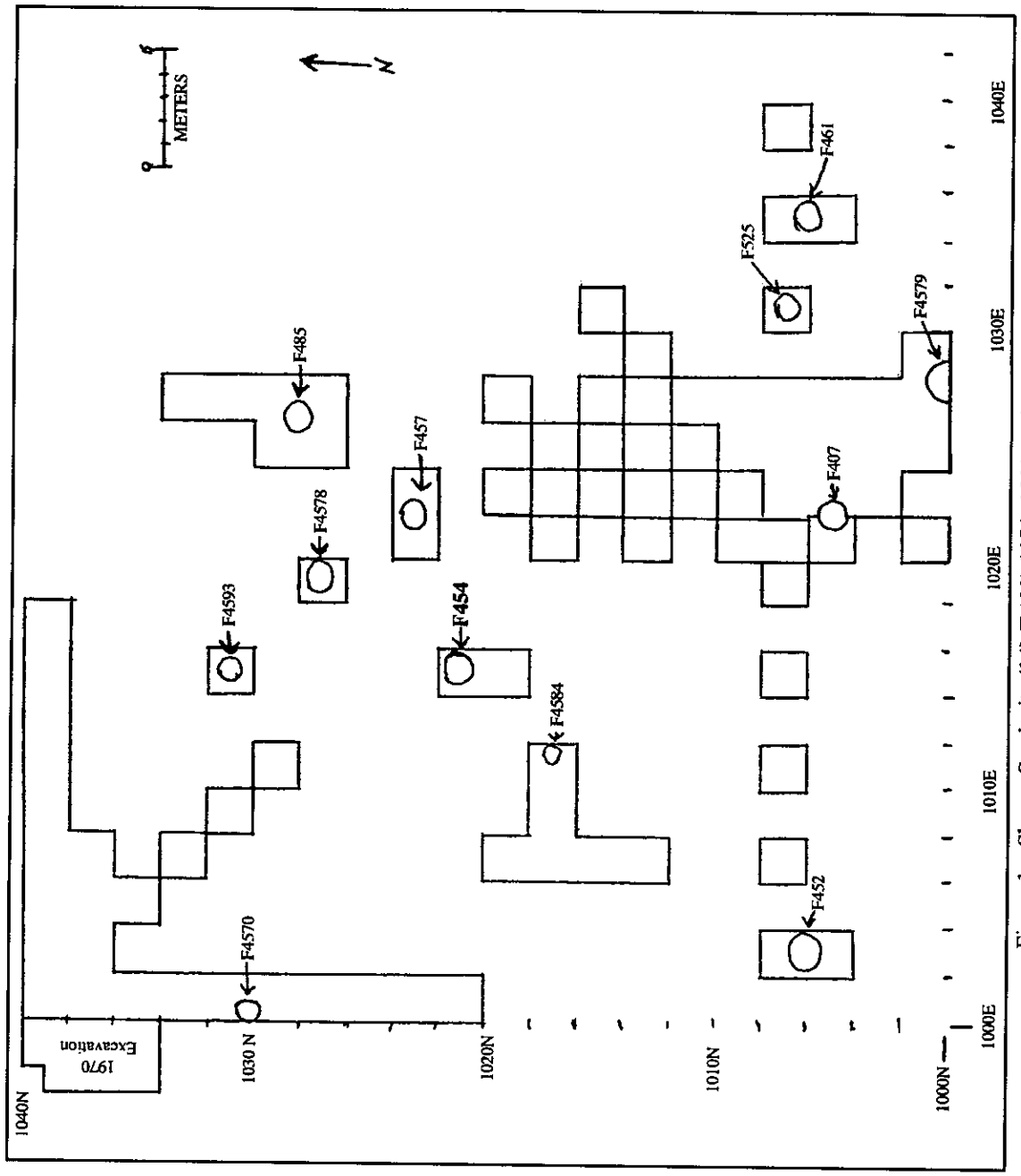

Figure 1. Sharps Creek site (14MP408) 1970, 1992, and 1993 excavations.

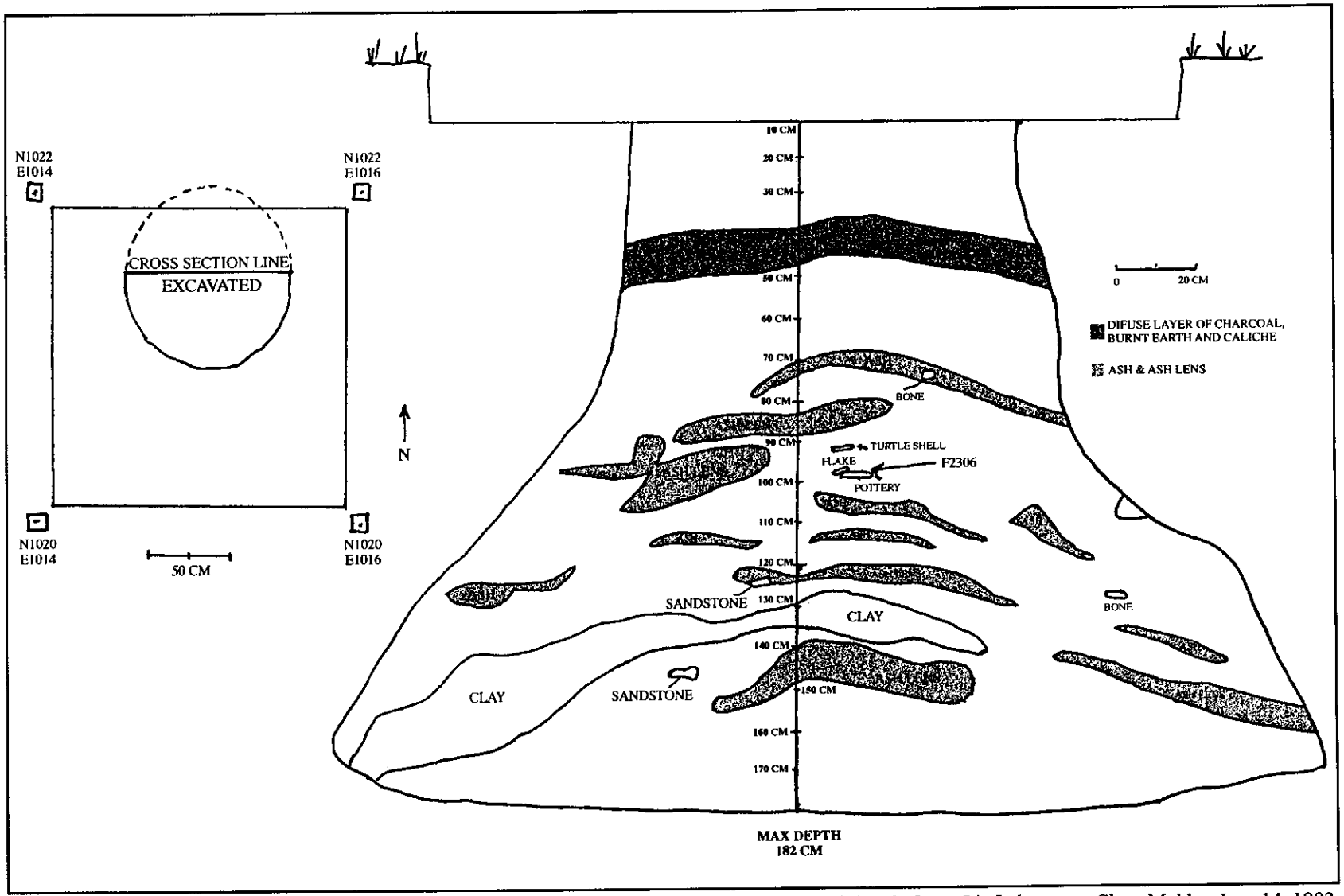

Figure 2. East to west profile of F454, facing north, N1020/E1014, 14MP408. From a drawing by William B. Lees, Lin Lohrmeyer, Cleve Mulder, June 14, 1993.

noting location, level, and sample number. The 2-mm sample was then spread out on a tray and sorted under a 10- power magnifying glass with a florescent lamp attached. The sample contents were sorted into 12 categories: ceramics, lithic pieces, burned bone, unburned bone, burned earth (daub), charcoal, sandstone, minerals, seeds, metal, shell, and snails. These artifacts were bagged, counted, labeled, weighed, then logged onto a sheet made up for x-unit and depth level. Any unusual items were noted on this log sheet, which could be used for future investigation.

The light fraction samples initially were treated the same way, using the grain size sorter. However, all sizes were scanned for the botanical remains. The 2-mm screen samples had charcoal large enough to identify as to the species of trees or shrubs, maize charcoal (kernels, cob fragments, and embryos), and other large seeds. The 1-mm screen samples were scanned for grass and weed seeds. The .5-mm screen samples were scanned for other minute seeds, such as chenopodium, amaranth, smart weed, etc. A 70- to 200-power binocular microscope was utilized for this process. The large pieces of charcoal were placed in vials and labeled. Smaller seeds were placed in gelatin capsules with labels.

Forty-four samples were taken from F454. Thirty-two of those were taken from the south one-half before the profile was drawn; the remaining 12 were from the north one-half. As was expected, the presence of corn (*Zea mays*) was obvious with kernels, cob fragments, and embryo pieces appearing in all 44 samples. Small pieces of squash (*Cucurbita* sp.) rind appear in 24 of the 44 samples; seeds were present in only 5 samples. Beans (*Phaseolus vulgaris*) appear in just six samples.

Wood charcoal appeared in all 44 samples, but just a few pieces were large enough for comparison. A sample from the 105-110-cm level was sycamore (*Platanus occidentalis*), and a sample from the 110-120-cm level proved to be pieces of cottonwood (*Populus deltoides*). Also in the charcoal samples were a few grass fibers, appearing as hollow stemmed reeds (species unknown).

An unusual find were three ground cherries (*Physalis heterophylla*). These were found in samples from two different levels but only separated by 10 cm. Other names for this plant are husk tomato, Chinese lanterns, partridge pea, and tomatillos (Mexican variety). The fruits have been found at numerous archeological locations in the Central Plains and adjoining eastern woodlands (Kindscher 1987:163).

Other seeds found in the light fraction were amaranth (*Amaranthus retroflexus*), tobacco (*Nicotiana quadrivalvis*), smartweed (*Polygonum* sp.), and the ever-present carpet weed (*Mullugo verticullata*).

Seeds recovered from the heavy fraction included non-carbonized seeds and shells and carbonized remains. The majority of seeds recovered from the upper levels of the x-units were the shells found in mouse nests. One sample produced as many mouse coprolites as seed and seed shells. The seeds present were of the vetch (*Vicia* sp.) and sedge (*Carus* sp.) families of which there are numerous members. Table 1 lists the floral remains from the heavy fraction, and Table 2 lists remains from the light fraction of F454.

In addition to carbonized material, gastropods occur in the flotation samples. These are scavengers that live in leaf clutter and decaying wood and feed in wet surroundings. In all of the heavy fraction samples from both 1992 and 1993, few gastropods appeared: 12 of the same species. In the light fraction of F454, 34 samples contained 524 of these minute land snails, ranging in size from 3 mm down to .2 mm in diameter. Four species were represented: 1) *Hawaiia minuscula*, a small flat heliciform (Leonard 1959:120) of which 373 were recovered; 2) *Helicodiscus paralleus*, another small flat heliciform that likes a slightly more arid ecotone (Leonard 1959:132) of which 119 were found; 3) *Pupoides hordaceus*, a form with extended rather than flat coils that also likes an arid ecotone (Leonard 1959:183) of which 29 were found; 4) *Lymnaea b. cockerelli*, a larger cockerel shell that is about 7 mm long and 4.2 mm wide. These prefer a pond-like environment but can withstand drought conditions (Leonard 1959:51). Three have been recovered and are believed to have come on a turtle or reeds from the nearby Smoky Hill River. The first three types of snails are climatic episode indicators from a time near the end of the Pacific I into the Pacific II, a period of drying to becoming arid during which heavy summer showers could fill ground depressions (Baerreis and Bryson 1965a:215; Baerreis 1969:56).

DISCUSSION

Considering both the heavy and light fraction from F454, there are three depth areas that yielded a wealth of information. In the 160-170-cm level two clues are present: 1) pieces of white clay pipe of foreign origin and 2) a concentration of seeds of tobacco (*Nicotiana quadrivalvis*). The seeds indicated the time period of middle to late summer—long before the plants are ready to be harvested and dried in the fall. Wilson (1987:123) stated that the Hidatsa men (the tobacco gardeners) picked the blossoms starting in June, dried them, and preserved them with melted buffalo fat. When totally dry, they could be smoked.

Table 1. Floral Remains in Heavy Fraction from F454.

Common Name	Species	Number of Samples
		carbonized
Corn	*Zea mays*	17
Squash	*Cucurbita* sp.	13
Beans	*Phaseolus* sp.	1
Sunflower	*Helianthus* sp.	4
Chokecherry	*Prunus* sp.	2
Grape, wild	*Vitis* sp.	2
Hackberry	*Celtis* sp.	2
Hazelnut	*Corylus* sp.	4
Black walnut	*Juglans nigra*	2
		non-carbonized
Vetch	*Vicia* sp.	31
Sedge	*Careus* sp.	104

Table 2. Floral Remains in Light Fraction from F454.

Common Name	Species	Number of Pieces	Number of Samples
Corn	*Zea mays*		
Kernel		323	44
Cob (cupule fragment)		460	43
Embryo		151	24
Bean	*Phaseolus* sp.	16	6
Squash	*Cucurbita* sp.		
Seed		6	5
Rind		289	24
Tobacco	*Nicotiana quadrivalvis*	197	31
Wood charcoal		43.7 grams	44
Grasses			
Amaranth	*Amaranthus retroflexus*	171	29
Chenopodium	*Chenopodium* sp.	86	25

Weeds			
Smartweed	*Polygonum* sp.	21	8
Carpetweed	*Mullugo verticullata*	374	37
Ground cherry	*Physalis heterophylla*	3	2

The next area of concentration was the 100-120 cm depth. It yielded the largest amounts of corn (139 kernel pieces, 186 cob fragments, and 10 embryo pieces), squash (118 rind pieces), and beans (3 fragments). Wood charcoal samples from this level were identified, using the comparative collection, as sycamore (*Platanus occidentalis*). Also present in the charcoal were hollow stems of grass (species unknown). The best finds were the ground cherry seeds, which gave a time period of late summer or early fall.

In the next level of concentration, 80-90 cm, a ceramic complex (F2036) was found, yielding 123.3 grams of pottery. At this same level a large amount (60.6 grams) of lithic material and two points were discovered. Also a large amount of low-fired clay was present. The clay fragments appeared to have been twisted between the fingers and squeezed to test the consistency of the wet clay, leaving a fingerprint on one piece. Also a piece showed striations resulting from the clay being wrapped around a lithic blank. These activities were all summer related and possibly done just before going on the fall hunt for buffalo. The bone fragments, both burned and unburned, included bison and turtle. A large number of snails (142 specimens of 3 species) probably lived off the vegetable matter and meat orts that would have been present.

SUMMARY

The profile drawing of F454, produced during the 1993 field project, has added to the author's understanding and analysis of the day-to-day activities of the Quiviran Indians. The storage pits of these people, which were turned into refuse receptacles by the little creatures of the prairie, have provided a world of information. The stratigraphy of F454 showed floor sweepings, ashes from fireplaces, pieces of bone and scraps of food, ceramic residue, and lithic debitage. The presence of the snails has given information about the climatic conditions of the area. Seeds were not present in the large numbers hoped for, but the ground cherries were brought back to the village area to be processed rather than eaten raw in the field. Corn cobs, as well as the local trees, were used as fuel, indicating to the author the approach of the cool fall mornings.

All of this information has shown the possibility that pit F454 was filled during the summer and fall of the year when Coronado found the Quiviran Indians living in "golden beehive" houses on the plains during his search for the "golden cities of Cibola."

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NOTES

SUSIE WABNOSAH: A PRAIRIE POTAWATOMI WOMAN IN THE EARLY 1960s

Faye A. Clifton
with James A. Clifton
Western Michigan University

The Kansas Anthropologist 18(1):35-43

Between 1962 and 1966, intermittently, I worked with my husband, Jim, interviewing Prairie Potawatomi women, usually in their homes on the Prairie Band Reservation north of Topeka. One of the aims of my conversations was to obtain life history information; another consisted of ethnographic queries, mostly concerned with the experiences of Potawatomi women. Here are the results of one such set of meetings in 1964, with Susan Wabnosah, known to everyone as "Susie." Born in 1910, Susie was then 54, childless, and long married to James Wabnosah, always called "Wild Bill" because of his distinctive baseball pitching style as a youth. Because Bill was heavily involved in Potawatomi ritualism, Susie was constantly associated with him as he conducted his extensive ritual duties—and she, her own collateral responsibilities.

CONVERSATIONS WITH SUSAN WABNOSAH

"My mother is *Pkuknokwe*, and my father was Frank Masha. He's gone now. I was born on the reservation, in the same place where my mother lives now. I'm descended from one of the old Potawatomi chiefs, *Shabnee*" (see Dowd 1979). "He was about my great-great-great grandfather. My mother could trace this. I can't. *Mshan* was my grandfather, my mother's father. I was descended from *Shabnee* through my mother.[1]

"I was raised by my mother. There was just the two of us with her, my sister and I. We never moved around. We always lived where my mother lives now. The first thing I can remember—that happened to me—I remember my grandmother. I really liked her. She lived about three miles away. She was my mother's mother. Her name was *Sosmokwe*. She died about 30 years ago. We stayed with her—Bill and I—when we first got married, for about 10 to 12 years. She was very old. I did all the housework. She couldn't do anything. She was way over a hundred

Figure 1. Susie Wabnosah in 1964, working at her favorite craft in which she excelled.

Figure 2. Faye Clifton interviewing Susie Wabnosah. Note the high tech tape recorder.

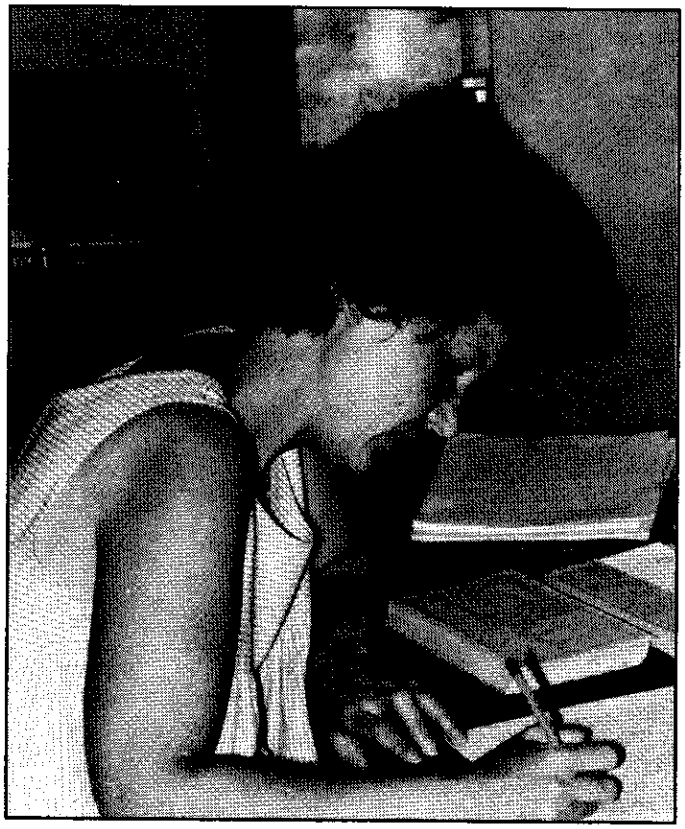

Figure 3. Faye Clifton processing Potawatomi demographic data in the pre-computer years.

when she died. We think my mother is 96 or 97 now, and she [*Sosmokwe*] was way older than that.

"But the first thing I can remember when I was little was not about my grandmother. What I remember first is my father working in the field; and I hated to think of that—of him out in the fields. I was afraid he was going to go quite a ways away. I would ask him where he was going all the time, and he would say he was just going out to the field. He would say I'm going back and forth, back and forth, from one end to the other. He never left, went away from home. I just had this fear he would.

"When I was about seven or eight I used to like to climb. I climbed all the time, and I would climb anything. We had this big corn crib with tall poles around the sides. Sometimes the corn would be up to the top, and sometimes it would be down low with the poles sticking up high. I loved to climb those poles. In those days we always wore dresses, not jeans, and my dresses were always stout material like gingham. My mother made them, and my pants were made from unbleached muslin. This one time I got caught up there, and my dress was way down

over my head. I couldn't get down, and I hollered for my father to come and get me down, but he couldn't hear me. We had this fellow who helped around, this farm hand, and he heard me, and he came over to get me down. But I didn't want him to see me like that, and I remember fighting him 'cause I didn't want him to see me, and yet I wanted to get down off of there, too. After he got me down, I ran right away into the house to my mother.

"My Indian name is *Sizan*.[2] I was named at the dancing ring—the Drum religion. It was under the Mattweoshe Drum, the same way it's done now. I was named for my father's mother. *Wahweoten* held me.[3] He was a very old man, in his 70s or 80s.

"When I was young, I never was whipped. Any punishment I'd get would be to duck me in a tub of cold water. The punishment I'd get would be for what I'd done wrong the day before. I remember my mother would come and pull me out of the covers in the morning and duck me in this tub of water. If I hadn't done no wrong the day before, I wouldn't get no ducking. It was always my mother did it.

"I didn't play with boys, not very often ... didn't have any brothers. I played some with Jim Kegg, my cousin, when he came over, and also Scott Nahnogah. His stepfather killed his sister, and he couldn't understand that, and he used to come over some. Scott was adopted by my cousin some time ago, and we always call him 'Brother.' He calls my mother his mother. He don't have no folks.

"When I was a child, I couldn't see no difference the way boys and girls were treated by their parents and older people. I used to get scared when I heard owls. I used to hear the older people tell stories about owls and wolves, and when I'd hear one, I'd get scared. My mother would sometimes say, 'You better quit crying or the owl will come!'

"We used to eat corn—dried corn, the same way as now. The Indian name is *tomon*. And we ate beans—dry beans. This is *kochasek*. We also ate gooseberries, strawberries, blackberries, cherries—any wild fruits. We grew our own potatoes. We would buy some foods at the store. We had a cow and had our own milk. We had hogs, we butchered, and we sold some, too, and we sold cattle, too. We had chickens, ducks, turkeys, had our own eggs. Father didn't hunt much, sometimes he got squirrels and rabbits and once in a while a prairie chicken. He fished some.

"At the store we bought rice, macaroni, oatmeal, coffee, sugar, flour. My mother made bread at home, mostly regular bread. Sometimes we had fry bread, but not too often. We got tired of that.

"When I was little, I don't think the men went off on a fast to get a vision anymore. They didn't do that anymore. But I did that, when I first had my periods. I was about 13 years old. I stayed in a little bark house by myself. I didn't see anyone but my mother. My mother told me to do it" (see McElroy 1968). "Some families still do that— over at Potts' they do. Cecilia Jackson and her daughter and her niece did it. They used to have the hut there, and they did that. But that hut is gone now. About six years ago, the wind blew it down, and Roseann Potts is too old now. She can't make another one. There aren't any others around anymore. People are supposed to fast, but they don't any more. But some still ask their daughters to fast, and they don't eat at gatherings or take water—they wait till they get home and eat.

"I always ate alone when I menstruated, and several others still do this. They don't eat with the families or at gatherings. Fasting is only on the first two months. I never knew the meaning of fasting at first menstruation and eating separately from the others at the time of my periods. My mother never explained. She just said that's what she did, all the girls had to do that, and when I came along, that's what I had to do, too.

"My mother and father wouldn't let me go to government school. They asked them up at the Agency[4] if we wanted to go, but they wouldn't let us, because there was only the two of us, and they didn't want us that far away from home. We went to the little [public] school here on the reservation. I couldn't speak no English when I first went. I could count all the way up to a hundred in English, my father taught me that, but I couldn't talk; and I couldn't understand the teacher; and I would have to ask this other girl—Jane Puckee her name is now—what the teacher said. It took me about a year to where I could understand.

"At school I never did get no punishment. Oh yes! Toward the end—one time. I had a fight with a girl; she fought me, and I had to fight for myself. The teacher [a White] made me stay in my seat and the other girl, too. She was White, and she was supposed to apologize to me, but then I was stubborn, and I wouldn't accept her apology, and then the teacher made us stay longer in our seats; we couldn't leave except to go to the toilet. This girl called me 'Bullshit,' that was it. 'You ain't nothin' but an ole Bullshit,' she said, and she came along and bumped me. I thought the teacher did all right by doing that. The teachers sometimes whipped the kids, not very often, but sometimes. There were about 30 or so kids in that school altogether; and the majority of them was Indian, maybe 10 or so whites. The teachers, they treated us all the same.

Figure 4. "Wild Bill" Wabnosah wearing his best ribbon shirt, sewn by Susie.

"When I was young, the parents sometimes tried to set up a marriage. But, well, Bill and I ran off from the folks and got married. First we went on a trip, we went to Council Grove, Kansas, and then we came up to Topeka. We went with the Indians putting on dances. But we got married in the Methodist Mission—we lived together about three or four months first. When we came back, we lived with my grandmother. My mother was upset, at first. But she went along, too. My mother and father and sister went with the group putting on the dances, too. My mother cooked, her and Nettie Wapp. There was about 30 of us altogether. My mother knew what was going on because Bill and I was together all the time. She had a feeling I was going to run off because I was with him too much. We both had the idea to get married at the [Methodist] mission. Well, they had this relief project at the Agency, and they wouldn't give Bill a job because we wasn't married—just living together—and so we decided to get married. Rev. Fink married us [the Rev. Eckert's predecessor]. We decided to stay with my grandmother because she was so helpless and then my mother was so upset.

"Before Bill and I married, I was asked to be married to another family. It was Frank Nioce I was supposed to marry. His parents came and asked my parents, but they wouldn't let me, because they thought we was somehow related—distantly. But I really don't think we are. Bill's family were also asked by another family for him to marry their daughter. But his mother said it was up to Bill, and he didn't want to. It still happened sometimes like that then [arranged marriages], but now I don't think they do it at all. When I was young, even, most got married on their own. I was 20 when I got married. Others got married both earlier and later than that. My cousin got married at 16, but the older ones thought later than that was better.

"Both my mother and grandmother gave me advice before I was married. They told me—be good to your husband, to have a husband and stay home, to get his meals ready, to keep him clean, not to argue, quarrel, have fights, to go with him wherever he wants to go, to go to same religion, and be good to his folks and they'll be good to me, they said. And don't use no liquor.

"After my grandmother passed away, we moved over to my mother's house and lived in a little shack there for about a year, behind the main house, and then my dad said to move over here—this was his place. We been here about 34 [24?] years altogether.

"When I was young, women nursed their babies for quite a while. I was walking and talking age when my sister quit nursing at my mother. *Nono* means to nurse in Indian, and she would go up to my mother and say that. She must have been about one and a half when she quit. Most people probably quit about that time.

"I know one real true Indian medicine. I have some others written down—can't remember them unless I do. The one I know, it's for bad colds. It's called *maskwake*. Sassafras would be the English translation. It has four different ingredients—the first is *maskanekakwek*, that's the sassafras bark; the second is *wiskachabuk*, that's the roots of a tree, they are white, but I don't know the English word for it; the third is *maskwakwaskek*, that's red pepper; and the fourth is *mukatawakwaskek*, that's black pepper. The pepper we get at the store, and the others we get around here. You grind the sassafras bark and the roots into a powder with a wooden pounder. Now they have those cast iron ones you can buy. We use the one over at my mothers—she has two—or we bring it over here. We had one here, but it broke, and we threw it out. Bill can make the wooden ones, but we just use hers. Hers are iron. *Potaken* is the Indian name for the pounder. Then you would have four piles, one of each of these ingredients, and they are mixed up together and stored together dry. Then we mix that in a cup of lukewarm water—each person would make his own. First we put a pinch on the East side of the cup, then

the South, then West, then North. And then you drink that. You put a pinch on the East, first, to face the sun first, to live and get well; it is healing.

"The other medicines I have written down are for colds, aches, heart trouble, to make friends, so you won't have no enemies, everybody just be friendly to you, eyes, like if you have sore eyes, nose, in case it bleeds, sores, to take infection out, burns. I can't remember no others. We still make *maskwake* and use it all the time. We make the others when we have to, then we do it. What we can't buy in the store, we dig up here. You can only dig some things some times of the year.

"There is one Indian medicine that can be taken to keep from having babies, but I don't know it. Nobody in my family knows it, but I heard my mother say there is one. I don't know anybody who used to use that or who still does. 'They' said my cousins took it, and Bill's sisters accused me of taking it.[5] They was mad at me once, and they said my aunt knew it because she has two daughters who don't have no children either. I don't remember ever taking anything—I don't drink much, so I would have known it I think ... I don't think I did—it's just nature I guess [i.e., being infertile]. I don't know of anyone who knows how to make that medicine.

"My grandfather—my mother's step-dad—owned a *pitchkosan* ['Medicine bundle']. I don't know its name; but it was a war bundle. When I was young, we used to attend those bundle ceremonies, at my grandfather's. I was a member of that bundle society, I guess just by inheriting it through my mother" (see Landes 1963 and 1970). "The regular ceremonies were held every spring. We still go, once a year in the spring. When my grandfather died, his bundle went to his grandson, Jim Kegg. Jim has it now. This is the Underwater Panther clan.[6] My father had one—he just kept it—it was never opened or used—it was also a war bundle.

"There are others I know about. Bill's mother keeps one now; and Susie Keesis LaClere has one that was her father's—she lives near Topeka, working there, but she has a home here and comes back. She still has ceremonies here. She had the last one over at the Community Hall this past month—right around Mother's Day. That's kinda funny, like showing off, they usually have it at homes. Hers is a *gigos* [Fish Clan] bundle. Mostly, only members of the Fish Clan attend, but they can invite visitors. It's no secret. And they were never secret. We got rid of my father's bundle. We all gave it away to my cousin, Francis Marshno—that's the Eagle Clan. I don't know why we did that, maybe because we couldn't take care of it, we couldn't afford to give no feasts, and it was theirs in the beginning, anyway. It belonged to my dad's sister, Josephine Marshno, and her grandmother had it before that—*Pitkwas* was her name; and so we gave it back to Josephine's son, Francis. Just those three are the ones I know about. Marshno—I guess he just keeps his bundle, or maybe he threw it away. I don't know.

"I never saw a medicine bundle burned or buried and don't know anyone who did that. There used to be lots of them. I don't know what's happened to them, lots of them's been sold, I guess. I believe it's been done, burning or burying, but I don't know anyone who did it.

"I belong to the *gigos dodem* ['Fish Clan']. I never heard anyone say what Fish Clan members should be like, or are like [i.e., personality traits], nothing like that.

"The first thing I remember about the Drum [Dream Dance] religion was when I was very small, when we went to the dancing. At that time we believed in both the Drum and the Bundle. They were about the same importance to us.

"When I was young, my Dad would tell me a few things now and then after I got old enough to understand. He'd tell me about—like when someone dies they have a spirit. Chickens, dogs, and cats don't have no spirit. My father was the one to explain what the Drum meant. Mother always scolded me and got after me, so I didn't listen to her much. Father always talked good to me; I would listen to him more. My mother used to holler at me, but my father would just call in a nice way when he wanted help.

"The Potawatomi used to make and use love medicine. But I don't know how it's made or how it's used—but there is love medicine. It's still being used. Charlie Bennick, he used to sell it to different ones. He's dead now; I suppose that old lady [his wife] still has it, remembers it and makes it. Her son, B., still makes it and sells it to different ones. For just a little dab—about a half teaspoon—it costs 25 or 50 dollars. I seen it some time ago. I found it out here, and I picked it up, and I put it on a board, and it got wet—it rained. I was half ways scared of it. It swelled *way up* after it got wet. That party that lost it, they knew they lost it somewhere, and they just got wild. I knew it was love medicine because it had red paint on it. I knew because 'they' told me that's the way it was painted.

"This owner when he came back to get it—we made him tell what it was for, before we give it back to him. Oh, that was about ten years ago. L. O. was the one that lost it. That was the only time I ever saw love medicine. It works this way, see. Well, he was a bachelor, see, and he wanted a woman and she wouldn't pay no attention to him. He would put it on himself, and then try to get close to her and put it on

her and then she would fall in love with him. But he didn't get the job done with her, maybe because it got wet. It didn't work for him. He got it from Fred Mason up on the Kickapoo [reservation]. He's passed away now, but his daughter, S. M. makes it, and she sells it, I suppose. It works. Oh, yes. Those are the only one that makes it I know for sure. Some others I think do: L. S. is one. H. W., he used that on his wife, that's how he got her; P. C., also, he used that on his wife, that's how he got her, too. See, she's quite a bit younger than he is. She's younger than me, too. Oh, and my aunt, M. J., she used that and makes it, too.

"I don't know about Peyote, never tried it. A few of the Peyotes go to the Drum but they talk against the Drum because they like their Peyote better" (see Bee 1964). "Oh, they half-ways believe in that Drum, but they believe in their Peyote more. You know, my sister goes to that. She had arthritis bad, she went to the doctor, and she was in the hospital, and they said they'd give her something to ease the pain; but she misunderstood, and she came home and said they couldn't help her at all, and then she went to the Peyote and thought that would help her. She thinks it has, but for my part I don't think it has. She's just the same.

"There's a lot of Catholics—more Catholics than Drum. There are more Catholics than Peyotes and more Peyotes than Drum. There's a lot of young folks that go, but they don't belong to it [the Drum]. There are lots of Peyotes, but they go in groups—small groups. They seem to go against each other. They have meetings most every week but Louise [Susan's sister] don't go to all; she only goes about once a month. She can go to any group she wants. You're not just a member of one group.

"There was more members of the Drum when I was younger than now, more old people then than now. Most of the people at Nettie's wake [a recent, heavily attended Drum ceremony] was Catholic.

"There used to be some Indian doctors in Wisconsin, but they all died off. These people used to go up there and get doctored. My grandfather went—we took him up there to be doctored to Wisconsin. Once there was Indian doctors here, too. There was one old man; I was doctored by one here when I was small. His name was *Nozackum*—Charlie's father. I had running bowels. I must have been two or three years old. Then they used to give me medicine afterwards every so often. My mother told me he gave me liquid—in tea form and in powder form, too, like that other stuff I told you about. Old man Bennick was a doctor, too. The people here that go to Indian doctors in Oklahoma go to Peyote doctors. They think that peyote is good medicine, but they don't really use peyote, they use some other herbs. They go to Peyote doctors when it hurts when you urinate and you catch it through the stools, too. [Venereal disease?] Yes, that's it, and it really helps, I guess, that peyote. Oh, that old man Bennick used to doctor them when they had that, too, but he's dead now.

"I think there's a lot of bad medicine going on nowadays. One of the ones who does that is M. G., he is one of them.[7] He sure acts funny, ornery, he's about 70 now. Oh, I heard him say ... somebody was doing some good and he said, 'I'll see to it that you go on ahead with it,' meaning he was going to stop it. He said that to Bill. Bill was naming babies [in Drum rituals], and George got jealous and he said, 'I'll see to it that you go ahead with this,' but there hasn't been anything wrong with Bill since then, so maybe he couldn't use that. Bill knew what he meant, though. He's his 'uncle,' too. Bill didn't do anything about it. He just said, 'Well, if I have to go, I will—there's no way out of it.' There is a kind of protection. Bill's mother knows how to do it and my mother, too. But they just said to watch ourselves. They didn't give us anything to use.

"There are others besides M. G. who do that, too. Oh, then I think L. C. does that, because she sure hides. She don't want anybody to suspicion that she does; she's sure ornery, too; and she tries to make trouble between the women, too, like if I say something about Becky Butler, she'll run up there and tell Becky what I said, and then she'll come down here and tell me what Becky said about me. There are others besides M. and L. I think that B. G. does, too. I heard him threaten somebody. I forget who it is. Those like that, they'd say, 'I'll meet you on the Road some time,' and then they'd have it out. They might put that [fatal spell or deadly medicine] on their food, or drink, or where they walk, they say they spread it on your door when you're not home, and then you'd go right through it when you come home.

"One time they put me up as President of the Pow Wow Club when it first started, and I was to choose five or six helpers, and I didn't choose L. C., and she sure was mad. She said, 'I'll see to it that she goes on to be President for good.' She meant that she would get me, kill me, or something. And when we was dancing around the circle, they had a dance for all the new members, she sure did look at me *real mean like*, and then I got this terrible pain in my knee, and I had to get out of the ring, quit, I couldn't dance, and I was crippled for a long time after that. I couldn't walk for three years. And yet she adopted me for her 'sister.' And I always think that's why I have so many ailments—I had a bad arm, bad eye, bad back, bad hand, nose bleeds, headaches, busting headaches, and

now its my toe. I had my thumb operated on [shows stitches]. I think maybe people are jealous of me, 'cause I try to do things, just by sewing, the beadwork, by trying to make things.

"That's why I wanted to go up to Wisconsin so bad—they could find out who's doing it. But we can't get enough money ahead to get a better car to get up there. Now his [Bill's] heart is bad, and that's why he can't work. There's no one else [here] that can help us. I think L. or M. is the one doing it. Or maybe H. is the one. He might have it in for me, too. I gave it up—being President of the Pow Wow—in a month. I turned it over to L. M. I made off that I didn't know how to do it, didn't know how to do my duties, and they let me get by that way. I think she did what she said she was going to do.

"I don't think there are any real tribal leaders or any real religious leaders for the Potawatomi anymore. Life on the reservation was better a long time ago, the way we used to live. We had good homes then, chickens and cattle, and we don't have that now. Life was better for us when I was younger. But we like to live here because we are to ourselves, we live as we please, we come and go as we please. And we don't have to pay no rent. But I don't like having no electricity, and the house needs repair. But we would not want to move, because we would have to pay rent and we don't have that kind of money.

"In the next 20 years, maybe we'll have better homes and better living. I think young people might want to stay here where [if] they don't have to work. But now they have to work and there's a lot of them leaving home. I think young people should go away to school; I wish I had gone.

"My mother, grandmother, and my father told me about how the Drum religion got started [i.e., narrated the origin myth]. In the Drum, women should prepare food to take over there; if there's cooking to be done, go ahead and cook; and they are supposed to repair the Drum. Any sewing to be done, if beads break, they bring needle and thread and sew it together. During the Drum service they are supposed to take a place, to sit around on the ground with the men, they are all supposed to get down there on the ground, but they don't do it any more, just a few does it. It's too hard for me, I can't get down there any more. They sing very low. They can sing any songs, and they can sing high if they want to, but they don't. Women are not supposed to touch the Drum unless they are repairing something. I don't know why that is.

"I keep dreaming about my father. Last night I dreamt we went to a Drum feast, and he was there, and he was dancing, and he would talk to me, and he'd say, 'Well, when are we going to go?' Just like he used to say when we were younger. Then, another dream—we was riding in a wagon going someplace, driving the horses in the spring wagon. I don't remember where we was going, maybe to town, I just don't know. It was my mother, my sister, my father, and I—just like we used to do a long time ago. When I was eight or nine, he let me drive the wagon. My father died a year ago last February.

When I was born, my mother had the help of a midwife. I was born at home, and Louise was, too. Susie Masquat is the only one left who did that [midwifery]. But they don't do that any more—they all go to the hospital now.

"There are some things that pregnant women are not supposed to eat. Let's see now. We had a coon once, and my sister-in-law was pregnant, and my other sister-in-law told her not to eat it. Some of them don't eat potatoes and berries or anything that's got seeds in it; and eggs, they don't eat eggs. They don't eat very much—they just eat very little. I don't think they do this now though—they eat most everything now. They don't eat eggs, because eggs makes a child have freckles. Seeds would bother them when they was carrying the child. Popcorn, that's another thing they couldn't eat—it makes a child have a stuffed up nose. Potatoes make a mother have no milk for the baby.

"There are other rules for pregnant women, too. They're not supposed to get hurt, cut, or bruised. Where lightning have struck, they say it makes a child yellow if the mother saw this, and the father too. If you see a dog have fits—they're not supposed to see this, or not supposed to see snakes or other animals, like going to the circus. The child would be marked if they saw this. If they saw a snake, the child will look up at you and stick out its tongue and act like a snake, and the child might have that—what do you call it?—epilepsy."

SUSAN WABNOSAH—AN APPRECIATION

Jim and I knew Susan and Wild Bill Wabnosah as a matched pair. Where the one was, the other was invariably close by. At the time we knew and worked with them, Bill was certainly the most involved and active of all adherents of the Drum (or Dream Dance) religion: he held an "office" on each of the Prairie Band's six Drum sodalities; and he was constantly absorbed with conducting seasonal and special purpose rituals of this "new" (for the Prairie Band in the 1960s, "traditional") religion. So, much of their social life consisted of preparing for and conducting various ceremonies and rituals: funerals, naming or adoption ceremonies, and the four major annual seasonal rites of

Figure 5. Susie and Bill Wabnosah admiring their patch of "Indian corn."

this religion. In effect, then, Susan was the wife of a minister of the Potawatomi gospel.

Susan was also an accomplished Potawatomi artisan. Her media was beadwork, at which she excelled, and was to be seen regularly employed. Susan and Bill were the poorest of the poor—in strictly economic terms. They had no regular source of cash income and supported themselves on no more than a subsistence level by their own labor. On their small patch of Kansas prairie, they sustained themselves by traditional Potawatomi horticulture, raising small crops of Indian maize, beans, and squash, as well as "modern" cultivars, such as potatoes and beets. These crops they supplemented by collecting wild berries, nuts, and roots. Their main sources of cash came from occasional sales of Susan's beadwork and their joint efforts at collecting discarded bottles along roadsides, which they accumulated by the hundreds and then carefully washed and sorted by brand into dozens of wooden crates. When they had accumulated a large enough quantity, and when cash was needed for some shopping, Bill would somehow coax one of his three ancient pickup trucks into temporary, backfiring life; they would load it until it sagged; and off to market they would go.

Figure 6. Susie and Bill Wabnosah preparing corn for drying.

Living with the limitations of financial poverty, however, did not mean that Susan and Bill were culturally impoverished. Far from it. Bill, with no one to tutor or sponsor him as a child, had made himself an extremely learned fountain of Potawatomi religious knowledge, in which Susan shared, as they shared their whole lives together. If there was anything tragic in their intertwined careers, it was that they were childless. Had they had children, this caring couple would certainly have seen to it that Bill's ritual knowledge and Susan's artistic skills would have been transmitted to a younger generation.

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NOTES

[1] Critical genealogies collected by Robert L. Bee indicate that *Shabnee* was actually Susie's great-great-grandfather and that she was descended from him through both her mother and father.

[2] This is the Potawatomi pronunciation of Susan.

[3] Meaning that *Wahweoten* conducted the naming ritual and named her.

[4] The Bureau of Indian Affairs sub-agency in Horton, Kansas.

[5] Susan was childless, in Potawatomi thinking, not a desirable condition.

[6] *Pitchkosan*, literally "Watches Over Us," was an alternate name for the Potawatomi culture hero, *Wiske*; and the same name was also used for one of *Wiske*'s embodiments, the individual and clan medicine bundles. The Underwater Panther bundle Susan is describing was an individual, not a clan, bundle, since there was no known Potawatomi Underwater Panther clan (see Howard 1960 and Clifton 1977:111).

[7] Here Susan was identifying suspected sorcerers, who are best left anonymous.

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NOTES

THE STATUS OF SIKSIKA BLACKFOOT WOMEN

Lucien M. Hanks
Edited by Jane R. Hanks
North Bennington, Vermont

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The data for this essay came from the Siksika Blackfoot of Gleichen, Alberta, Canada. They were gathered during the summers of 1938, 1939, and 1941 by Lucien and Jane Hanks, who pooled their notes. This essay was completed in December 1942. Quotations, when verbatim, are sometimes grammatically awkward. Joining the Hanks for one summer (1938) was the social psychologist Abraham H. Maslow for work with these Blackfoot. His study focused on the problem of deviancy.

The Hanks established bonds of warmth and trust with the Blackfoot. Both were "adopted," Lucien by Little Light, who gave him the name of "Bird Chief," and Jane by Mrs. White-headed Chief, who gave her the name of "Ambush Woman." The respective eponyms were individuals of note in tribal history. A final visit was made in 1951, this time with the Hanks' three children, all of whom were given Blackfoot names.

In general, women held a rather inferior position in the plains Indian culture. Siksika women were considered mentally inferior, in motor habits slow to react, unable to understand things, poor of memory as to songs, and fit only for doing the daily chores of a plains household, i.e., cooking and preparing of food, making clothing (including the decoration of buckskin and the tanning of hides), and raising children. Of the sole woman's society (*Matoki*, which literally translated means "not women"), men said that they had to lead all the songs so the women could go through their ritual. In practice this was not always the case for we knew aged, able women who knew the songs and had been through them for many decades.

The Blackfoot mother tended to be a nagging person who rebuked her child constantly and was prohibited by her husband from beating it, perhaps by her own conscience as well, for there was a horror of the white methods of spanking. The mother was known for scolding and could become very impatient, perhaps even to slap the child. The father, who came in from time to time and did not have the burden of its constant care, was known for being especially kind and permissive. Later he was expected to give his child sage advice.

In the old days girls were brought up with the expectation of perfect virtue ever present. They were allowed to roam to some extent from the house and played in children's groups at tipi games or at being captive in games of war. They had a few special games of their own, distinct from male games. From tests of bravery and skill, they were always excluded. It was generally expected that a girl should be married no later than her fifteenth year, calculated approximately since they kept no numerical count of the years. After a period of patrilocal residence, she and her husband frequently came to live near the tipi of the girl's family. This going-to-live-with-a-man was often a hard time for many girls but was accompanied by tolerant behavior on the part of the usually older husband. Sometimes, to make the change more complete, the newly married couple lived with the husband's parents for a year to accustom the girl to her new status. Gradually, with the help of an older sister of sister-in-law, the young wife would be inducted into the arts of cooking, tanning hides, erecting tipis, fetching water and fire wood, doing bead work, etc.

A young girl, first under the vigilance of her parents, later under the eye of her husband, had no choice but to be sexually faithful. Usually there was a true bond of affection between the husband and wife that prevented any temptation. However, when it came to the husband's second wife, usually the wife's younger sister, her relationship to the husband was classically more remote. It was she who was usually accused of infidelity. The punishment for infidelity varied with the circumstance: cutting off the nose, ears, or hair; killing her; giving her over for a rape-fest to the members of the warrior society to which the husband belonged, in order to give her enough of that sex freedom to last her a long time. The jealousy of Blackfoot males about women was one of the perennial sources of conflict within the culture.

This sort of treatment and the reputed inferiority of the women did not hinder Blackfoot women from playing a significant role in the society. In ceremonial

life they were usually given rather passive roles in which little beyond their presence was required, but there were important exceptions. Though never leaders of ceremony, they often were needed as ritual partners. For instance, to enter a warrior society, a man always had to have as partners a woman as well as a man. To acquire a Medicine Pipe one also had to have a wife or woman along. It was stated that in some ceremonies the transfer of a sacred herb took place during a kind of sex act of a very secret sort on a dark night. In selling a sacred bundle, the owner had "intercourse" with the woman who was the partner of the purchaser. Though this action did not occur in all ritual transfers of power, in many a woman had to be present for a potential or at least symbolic transfer.

The tribe's greatest ceremonial role, one performed only by women, was that of the vower of the Sun Dance. This central female figure had to be of impeccable skill and virtue, never unfaithful to her husband, and a virgin before marriage. In the old days she never remarried after the death of her husband. The woman who participated in the Tobacco Dance was similarly required to be impeccably virtuous. Sun Dance vowers and other ceremonially virtuous women could not participate as performers in the ritual transfer of power in societies, etc. The sexual acts or overtones would destroy the purity of their virtue.

There were tests of virtue during the preparation of the sacred tongues, which were given out at the Sun Dance ceremony. When the tongues were passed around, a virtuous woman might step forward to offer to remove the skin. If in cutting it, she pierced the skin with her knife, then people knew she had lied and revealed herself as unvirtuous. If successful, a woman established herself as virtuous and a potential Sun Dance giver. Sometimes a young girl of perhaps 15 stepped forward to perform this act, thereby formally declaring herself to be a virtuous woman, as distinct from the herd of loose, unfaithful non-virgins. The word passed around among the unmarried males to stay away from this virtuous woman. This type of woman was rare. In 1941 there were said to be only four in the Siksika Blackfoot tribe. In the past they might have been more plentiful, however, since there were sometimes Sun Dances during the year. Of course the tribe was also larger then.

Many a woman carried on frequent affairs, and all were considered fair game by young men. The frequent rendezvous was in the bush when they went for water. Men also might steal into a tipi at night. Because women were held to take the initiative in these matters, they were badly treated by their husbands when caught. This pattern of female initiative for social dances and marriage (at least for adults) was excused by males as sparing them the embarrassment of being turned down. Men, though, were not invulnerable. "Last year Tony went out from the dance with a woman and had intercourse with her. If someone saw him, they might tell his wife."

However, female roles were said to be changing. "Formerly husbands used to tell their wives what to do. Now wives have the say. At the mines the wives run around and do not prepare supper for them when they come home. They spent their time gambling. Husbands don't say nothing. It was better the way it used to be. A wife did what her husband wanted. They got along better that way." This was the statement of a woman, perhaps a little malicious with reference to the mine women. The word for persons with a record of infidelity was, if male, *nimax' patoma* (my double husband) or, if female, *nimax' katan* (my double wife). Usually an affair was temporary. A wife did not become a harlot by such conduct, she merely had to be forgiven by the husband or beaten.

In old days of war, captive women formed a different group. They were frequently taken into the house as wives but also might be killed. In one case, a young man came out of his tipi and saw a young woman who had been captured in battle. His father explained: "This woman was taken in the enemy camp by a young bachelor. She will stay here (with us) for a while until she is ready to be taken to his (i.e., the captor's) place."

In another case, two young men took a Cree girl captive. They had an argument over who took the girl. Someone was keeping her until they could decide. One of the contestants was a quick-tempered man, the other quiet. The quiet man told his mother to fetch the girl. The quick-tempered man heard and, getting his knife, walked toward the two women, the captive girl and the quiet man's mother, on their way to the quiet man's tipi. An argument started, and the quick-tempered man drew out his knife and killed the girl. He cut off her head and threw it after the fleeing mother, saying, "Take the girl now." In chief's meeting the council awarded the deceased girl to the quiet-tempered man and ordered the quick-tempered man to take the body out of the camp where it was lying and bury it in good clothing. "He should have killed the girl in battle but not after getting back to the camp, when it was just like killing another Blackfoot."

Women might also act as curers, have supernatural power from dreams and perform miracles. One woman had the power of talking with a dog who was able to find things stolen from her. Most had cures for female ailments, childbirth, etc.

The preference for males as over females was seen from the words of a dying mother-in-law to her

son-in-law. (Remember that this is a tabu relationship and that the son-in-law had been called to see this woman face-to-face for the first time in his life. He did not dare to look her in the face.) She said on her death bed in the presence of the relatives: "You [her daughter] were with my son-in-law, and he was kind to you. He is doing his best for you and for me and your sister and your step-father. Since he was my son-in-law, we were happy. He is my son too. I love you, but I love this son more than you because he is kind to you. Never think in the future of leaving your husband. Do you take my word?" The daughter accepted then, but later was unfaithful.

A hand game had been invented and accepted into the tribe from the Blood Indian reservation. It was a gambling game between men and women, had some ritual attached to it, and was only played on special occasions. No money was passed in the game, and food was the only reward for the victors. However, it is significant that the main position of responsibility was filled by men, who were jestingly called women and who talked and acted like women while in that capacity. The image was of women playing against women.

Four status roles of women have been identified.

1) The virtuous woman, who gave up her sex liberties for ceremonial preeminence and supernatural benefits.

2) The *matsaps* ("crazy" woman; a *matsaps* = crazy person), who dashed around and "did sexy things" all the time. "Mrs. J. K. wasn't much thought of. She's quieted down now. She used to be fighting all the time, quarreling with the women over the husbands she seduced; people didn't like her. She made trouble with all the husbands. She chased after them. She's in jail now for drinking and theft."

Another woman, Rosie M., "sells herself. She was in reform school for two years and when she came back she was a whore. She was in jail for arson; she thought they'd all go home if the school burned. There are others too, but they've settled down except Rosie ... I do not notice those others much; don't talk with them particularly. I've been stopped and told not to walk with them, or people would think I was the same as they."

Matsaps is never used for a wife who is forced by her husband to sell her sexual wares. Though never acceptable for high office, she would not be censored, for all would know that her husband forced it on her. Nor is this term used for a wife who might have occasional affairs as long as she is beaten by her husband for her conduct.

3) The *ninawaki* (a woman acting like a man). The reverse (a man acting like a woman) occurs as *awakikasi*. "Mrs. Weasel Calf is supposed to be a brave woman, a manly woman. She gave my girl Theresa that name so she could be brave too. She went out hunting with her husband. She's supposed to tell your mind and the future."

Another manly-hearted women dressed in male attire and went to war. She was killed before she could marry. This girl was from the Blood reserve. Another case concerned Mrs. Pretty Young Man and her sister, his second wife. Pretty Young Man left one of these women because of her manly-heartedness. "We don't like it, now that everything is civilized. They [*ninawaki*] used to ride horses and run the mower, cut hay and drive the team."

Such *ninawaki* were not bossed by their husbands but handled their households independently. "What do people think of independent women?" "They think they're proud. They are not the way they should be. People don't think it's nice, that it's out of the way, not good. They [women] should obey."

Correlated with this status is one called *saamyaki* (head-dress woman). "Years ago wives of chiefs and other *ninawaki* women wore a war bonnet that stood straight up. Women who could afford to pay for the honor of wearing that headdress led the dance. It is dying out now. Today they don't try to beat [win] so much. One *ninawaki* said she wouldn't wear the same dress to two dances. She knows we can't afford that. She's proud, always saying things like that."

Most of these comments on *ninawaki* were by women who apparently feared them somewhat as threats to the fidelity of their husbands. In another kind of case, a quarrel over marriage took place within a family in which the daughter took one side and the step-brother the other. Mrs. A., the *ninawaki*, was in a tipi with her younger sister when the step-brother entered in a hurry.

> They heard four heavy steps and Step Brother entered and grabbed the younger sister who hung onto Mrs. A.'s leg. Step Brother was trying to pull both apart. Then another woman living in nearby tipi rushed in shouting, "Let them go!" So Step Brother took her word and let go, but produced a stone to crash down on younger sister's head, but she jumped aside and let it hit her on the hip. Step Brother yelled, "You have to marry him [Piksis] because I am your older brother. If your real older brother comes you still have to marry him. I am the boss." Mrs. A. shouted, "Why do you want Piksis as a brother-in-law? I'm not going to let her [marry him]." Step Brother: "You are the one I meant to kill with the stone." Mrs. A.:

"Why don't you kill me, so I'll be the first one that you kill?" These were mean words; so he came back, struck her on the shoulder, grabbed her hair, and she, his. She was flung about; so she tried to kick him in the balls but missed. They tried to hold her, but she jumped up and scratched Step Brother's face. All stopped there, but Mrs. A. vowed that she would fight with him again, and later did, though separated again by others. Step Brother's older sister took up the fight and struck Mrs. A. while bathing naked near a spring. Again outsiders intervened while Mrs. A. was slowly choking the Step Brother's sister to death. After a series of more fights, the chief intervened and settled the matter.

It was not, however, without Mrs. A. establishing a reputation as an *ainaxkasi* (no translation given).

4) The *ninaki* (chief woman), which has two meanings: a) the wife of a chief, a respected woman able to do the job of chieftainship, and b) the favorite wife of a man. Such a wife is his sex object and is spared all the drudgery of the household for this purpose. *Ninaki* were frequently brought up with special privileges by their parents and more or less groomed for the job.

"Pipe Woman was given everything as a child, had many horses, wore a weasel head on her forelock, married with a big dowry. In marriage she did little easy jobs, played with toys. Her husband's brothers and sisters erected the tipi and made the beds for her, while she sat and watched." In general a wealthy and fastidious man might have one of his wives reserved for him in this way.

In sum, these status types were deviations from the main female role of easy-going, submissive, slightly unvirtuous people. All but *matsaps* were desirable, though *ninawaki* and *ainaxkasi* were questionably desirable.

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LEWIS AND CLARK'S KANSA INDIAN VILLAGE AND OTHER SITES IN THE INDEPENDENCE CREEK VALLEY

Robert L. Thompson

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Twenty-three previously unknown Indian sites, found in a large creek valley of approximately 2 mi², lead the author to believe that the complex of sites is the Kansa (also spelled Kanza) Indian village visited by Etienne Veniard de Bourgmont (also spelled Bourgmond) in 1724. If so, that makes it the earliest documented Kansa Indian village in Kansas. The physical evidence in the form of Indian artifacts, combined with the description by Lewis and Clark in their Journal of 1804 and with the 1839 maps of Joseph N. Nicollet, marking the location of the village at the junction of Independence Creek with the Missouri River, shows that the village was located in the Independence Creek valley and not at the Doniphan site, 1 to 2 mi farther up the Missouri River, as was formerly thought.

On July 4, 1804, Lewis and Clark came up the Missouri River and, after passing where the city of Atchison, Kansas, was later to be built, continued on north up the river to camp for the night across from a creek that they named Independence Creek in honor of the day.

Lewis and Clark seemed very impressed with the Independence Creek valley by the way they described it in their journal entry of July 4, 1804.

> ... pass a Creek on the L.S. about 15 yards wide coming out of an extensive Prarie as this Creek has no name, and this day is the 4th of July, we name this Independence us. (U.S.) Creek above this Creek the wood land is about 200 yards, back of those wood is an extensive Prarie open and high, which may be Seen six or seven (miles?) Below. We Camped in the plain one of the most butifull Plains, I ever Saw, open & butifully diversified with hills & vallies all presenting themselves to the river covered with grass and a few scattering trees a handsom Creek meandering thro at this place the Kansaw Inds. Formerly lived and had a verry large Town passed a Creek(4) I observed Spring braking out of the bank, a good Situation for a fort on a hill at the upper part.

They continued to paint a glowing picture of the landscape.

> The Plains of this countrey are covered with a Leek Green Grass, well calculated for the sweetest and most norushing hay--interspersed with Cops (copses) of trees, Spreding ther lofty branchs over Pools Springs or Brooks of fine water. Groops of Shrubs covered with the most delicious froot is to be seen in every direction, and nature appears to have exerted herself to butify the Senery by the variety of fours (raiseing) Delicately and highly flavered raised above the Grass, which Strukes & profumes the Sensation, and amuses the mind throws it into Conjectering the cause of So magnificent a Senerey (several words illegible, crossed out) in a Country thus Situated far removed from the Sivilised world to be enjoyed by nothing but the Buffalo Elk Deer and Bear in which it abounds and Savage Indians.

A copy of Joseph N. Nicollet's 1839 manuscript maps of the Missouri River and upper Mississippi basin, compiled by W. Raymond Wood, was obtained from the Illinois State Museum (Figure 1). On plate number 20, dated April 17, 1839, on the west side of the Missouri River, north of Independence Creek where it joins the river, it shows "Old Kansas vill" with a line of hills west of the village. This location coincides with the description of the valley Lewis and Clark camped in on July 4, 1804, at the abandoned Kansa village.

On July 5, 1804, Lewis and Clark continued upriver and made the following entry in their journal.

> Set out verry early this morning, Swam the horse across the river, proceeded on for two miles under the bank where the old Kansas town formerly stood (Say in 1724) The Cause of those people moveing from this place I cannot learn, but naterally conclude that War has reduced their nation ....

This site is likely the town of Doniphan, Kansas, where in 1937 Waldo Wedel did a large amount of work, which he reported in his book *An Introduction to Kansas Archeology* (Wedel 1959:100).

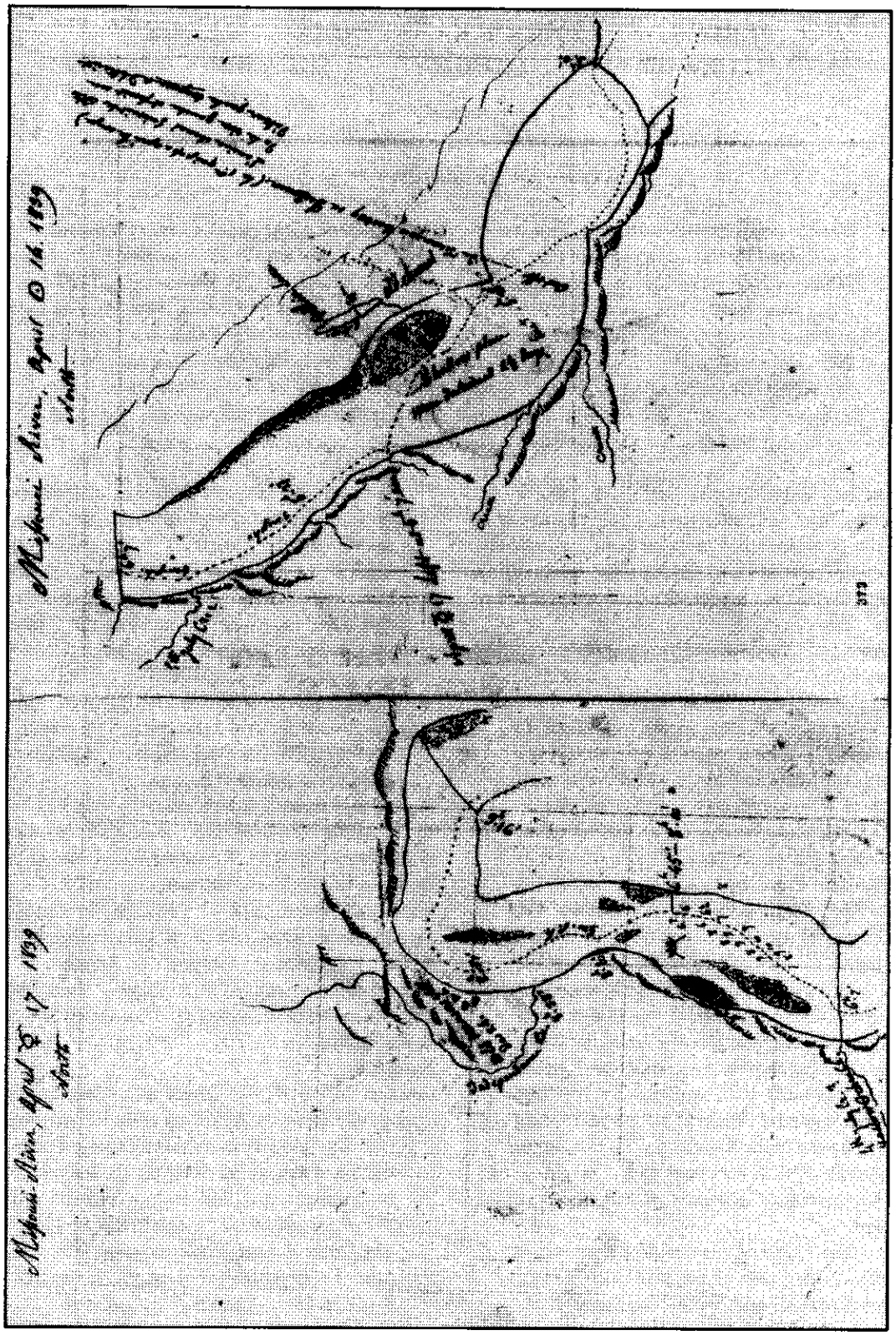

Figure 1. Joseph N. Nicollet's 1843 map of the "Hydrographical Basin of the Upper Mississippi River." Reprinted courtesy of the Illinois State Museum.

> Our interest in the remains at this spot derived largely from the fact that the site is believed, with very good reason, to mark the principal village of the Kansa Indians when they were visited by Bourgmond in 1724 (Remsburg 1919). The location cannot be verified from Bourgmond's narrative alone, or from Renaudière's statement that 30 leagues above the Quans [Kansas] river—
>
> ... a small river [Independence Creek] flowing from the north is found, here is the great village of the Quans [Kansa], consisting of 150 lodges adjoining the Missouri. There are fine prairies to the south and many mountains to the west ... (Margry 1886, pt. 6:393).

Even though Wedel found a lot of evidence of Indian occupancy, enough to learn that the area had been used by at least two different cultures, he seemed unwilling to state definitely that it was the Kansa village visited by Bourgmont (Wedel 1959:99).

> Although the former existence of a large and important Indian village on this spot has long been known, its precise location and extent seem never to have been set forth adequately by those who recognized it in the early days.

At about the turn of the century, George Remsburg, a local archeologist of some renown from Atchison, had been active in the Doniphan area and south of Atchison along the Stranger Creek drainage around Potter, Kansas, and had some of his work published in the *Archeology Bulletin* from 1893 to 1919. Wedel quoted from and seemed to use Remsburg's work as a guide to some extent. While working at Doniphan, Wedel did not say if he did any work in the Independence Creek valley, but he did describe it in some detail (Wedel 1959:99).

> The terrain east and west of Doniphan is rough and hilly; to the west, the valleys of Independence Creek and its tributary, Rock Creek, lie just over the first ridge, beyond which the hills and ravines continue. Limited stands of hardwood forest fringe streams and cover the steeper slopes of the bluffs, but most of the land is in cultivation.

WEST OVER THE FIRST RIDGE

West over the first ridge brings us back to the Independence Creek valley, which is big enough to hold the 150 lodges reported by Renaudière (Wedel 1959:29). On the night of July 4th, Lewis and Clark camped on the bank of the Missouri River opposite the plain on which the Kansa village was located and also opposite the mouth of Independence Creek.

> In the same year [1723], the engineer La Renaudière briefly described the "Grand Village des Quans," consisting of 150 lodges standing near the Missouri on a small stream 30 leagues north of the mouth of Kansas River ....
>
> From this Kansa village, Bourgmond left on October 8, 1724 ....

The size of this village becomes more impressive when an attempt is made to set some population number for the Kansa who lived here. Given the 150 lodges reported by Renaudière (Rogers 1988:57) and the total of 1,116 Kansa counted by him on the way to the Padouca, a sizeable area for the village would be indicated.

The valley was large enough to support a population big enough to provide Bourgmont with a party of the size described by Barry (1972:19): 2 Great Chiefs, 14 war chiefs, 300 Kansa and Missouri warriors, about 300 women, 500 young people, and 300 dogs pulling travois. This entails quite a lengthy and slow procession leaving Doniphan, and it provides a measure of the possible size of the village.

Dr. Alfred E. Johnson (1988:184), professor at the University of Kansas Museum of Anthropology, comments as follows.

> Recently, Johnson (1988) has questioned the association of the Oneota occupation at Doniphan with the Kansa, and suggests that it probably pertains to an early eighteenth-century Oto usage. If so, the Kansa village that was visited by de Bourgmont remains to be located and the late prehistoric-protohistoric material culture of the Kansa remains to be identified.

The remaining portion of this paper will be used to list the sites found along Deer, Independence, and Rock creeks. The artifacts that have been found can not be attributed to any certain culture or group at this time. The sites are located in the same valley that Lewis and Clark believed to have the abandoned Kansa village in it. They may have had information and/or informants on which to base their identification of the former occupants of this village of which they seemed to be certain.

TWENTY-THREE SITES

The 1886 map of northeast Kansas shows that the Missouri River still flowed as it did when Lewis and Clark were by in 1804 (Figure 2). At that time Independence Creek joined the Missouri River where

the river made a sharp bend to the south. This bend of the river is no longer there. It did remain as an oxbow lake for a number of years and was called Doniphan Lake. It was a big enough lake that it became a popular fishing and duck hunting spot for quite a while.

The map of sites (Figure 3) was adapted from Atchison NE, Kan-Mo. 1959, photo revised 1972, and Atchison East, Kan-Mo. 1984, 7.5 Minute Series (Topographic), United State Department of the Interior Geological Survey map. On it are the three main creeks of the area—Rock Creek, Deer Creek, and Independence Creek. Rock Creek from the north and Deer Creek from the west both empty into Independence Creek, which in turn drains into the Missouri River, shown by the dotted lines at its approximate location in 1886.

Turning attention to previously unknown sites found in the Independence Creek valley, in a 1993 article in *The Kansas Anthropologist* (14[2]:1-9), Thompson and Reichart reported on the sites that the author had found at that time: 14AT441, 14AT444, and 14AT445. These three sites are located at the very south end of the Independence Creek valley where Deer Creek, flowing from the west, follows along the base of a long river bluff that runs along the west bank of the Missouri River for many miles south of this point, making for the first opening to the land west of here. In prehistoric times the Missouri River ran south along another line of river bluffs at the base of the Doniphan site (14DP1), swinging west from Doniphan to turn south to pick up Independence and Deer creeks at this point before flowing on south from here.

Since then, the writer has found and recorded 20 previously unrecorded sites. These sites are located throughout the entire valley and were found by field surveying of the plowed ground only, so there is no way to know the location and number of sites that could be in unplowed ground or below the plow zone. It may be of some importance that only the cluster of sites found so far is to the north end of the valley on a triangular shaped field, bounded on the east by Rock Creek and southwest by Independence Creek. This field is far enough up the valley that it may have been spared some of the flooding from the Missouri River, and sites were not silted over like the sites at the south end. Sites 14AT449, 14AT449-S, and 14AT450 are located in about the middle of the valley and are the only three sites found in an area a mile long and half a mile wide, so there could be a wealth of information buried just a few centimeters deep, waiting to be found.

The eight sites along Deer Creek at the south end of the valley seem to be the south edge of the village, as the hills rise sharply at this point. However, 14AT445, 14AT452, and 14AT451 are on the hills, so there may be more to be found there. Site 14AT438-N was the first found by the writer, and it had already been found and reported by Bill Hisle of Atchison.

As Figure 3 shows, there is a large area between the Rock Creek sites and the ones along Deer Creek, where many more sites could be. Along the east side of Independence Creek, there was nothing showing except for one hammerstone.

14AT327

After the writer found charcoal eroding from the west bank of a pit silo at site 14AT327 and reported it to Randall Thies at the Kansas State Historical Society, it was decided to excavate it. In 1992 Thies and the writer excavated what proved to be a cache pit exposed in the side of the silo at the ridge top directly to the west above the proposed location of the Kansa village. This pit contained potsherds that Thies identified as belonging to the Pomona variant. The single projectile was identified as a Scallorn point (Figure 4c), which may be quite significant because charcoal from this feature was radiocarbon dated 910 +/- 60 by the University of Texas at Austin. Scallorn points are common to the Grasshopper Falls phase of Plains Woodland. The suggested time period for this phase is A.D. 500 to 1000 (Reynolds 1979:101). However, Scallorn points are also a common find at sites attributed to the Pomona variant of the later Village Farmer period. Also found in the pit were chert flakes, bone, and a kernel of corn.

The following is the abstract submitted by Thies to Don Blakeslee at Wichita State University, March 17, 1993, for a paper he delivered at the Flint Hills Conference of that year.

> Pottery, Pit, and Paleosol: Recent Discoveries at the Bob Thompson Site in Atchison County, Kansas
>
> In late 1992 a trash-filled pit was discovered eroding from the wall of a trench silo cut into a loess-hilltop overlooking Independence Creek and the Missouri River. Excavation produced grit-tempered Pomona pottery, corn, and charcoal which produced a corrected radiocarbon date of A.D. 910 +/- 60. The pit was discovered to be extending downward from a shallowly buried paleosol, suggesting that much of the postulated habitation site is still intact and undisturbed. The site is believed to have excellent potential for the finding of further information about the northern Pomona.

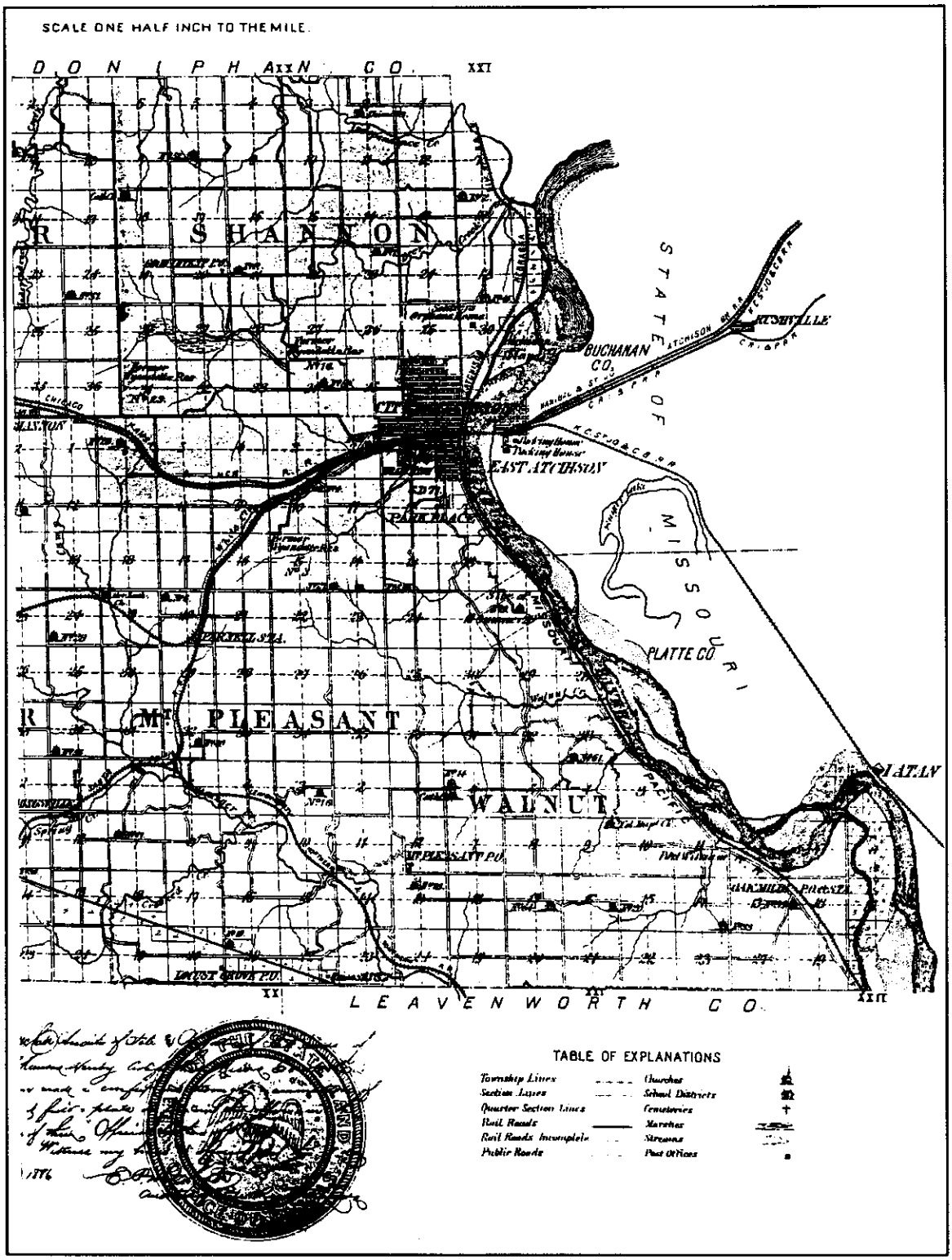

Figure 2. 1886 map of northeast Kansas.

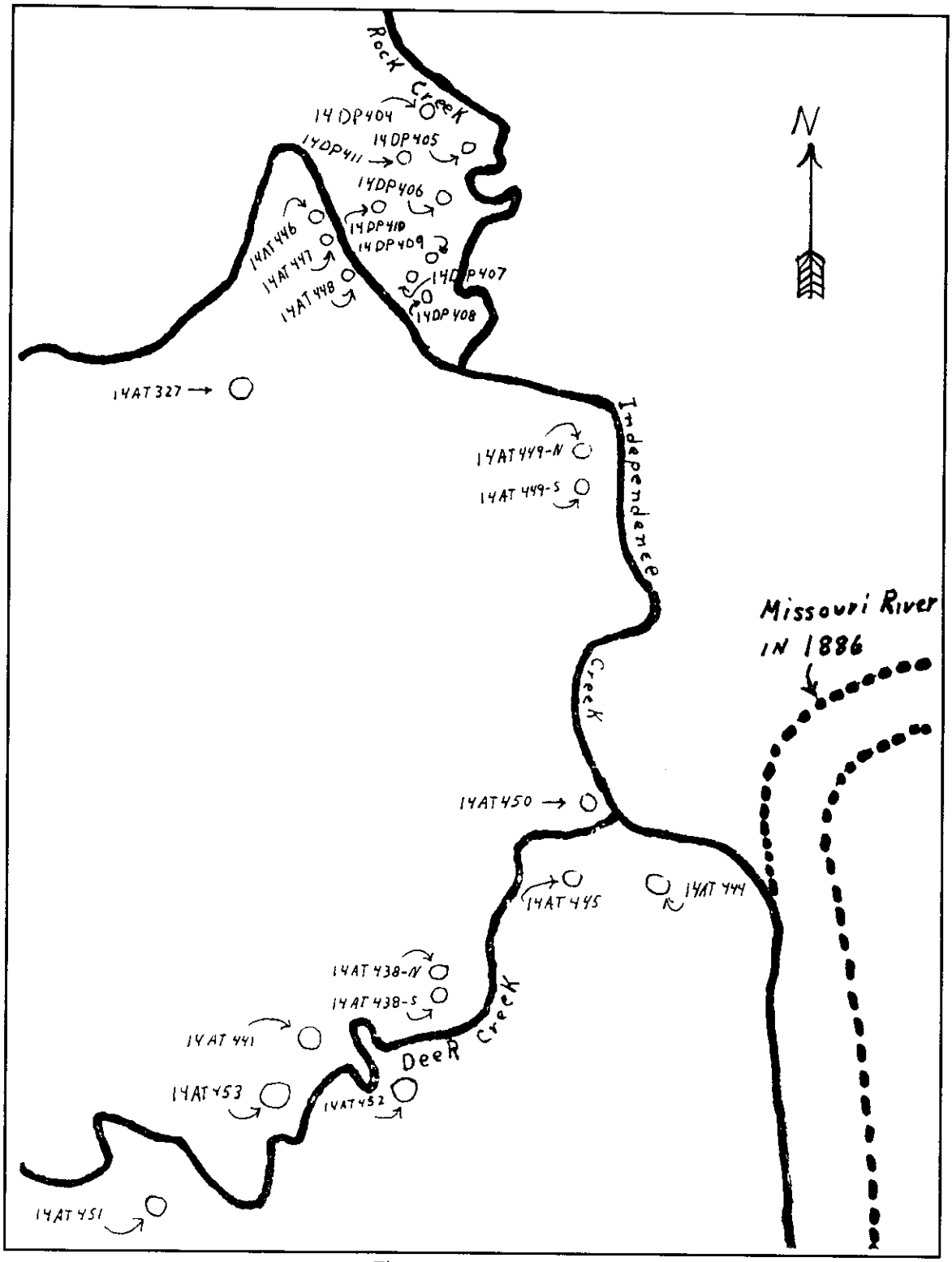

Figure 3. Map of sites.

14AT444

In the fall of 1993, Bob and Freda Thompson excavated a 2-m test square at 14AT444. On the surface was an abundance of potsherds, flakes, and daub, which indicated that an occupation for some time was most likely. In the first 10 cm a mano was recovered along with more daub and flakes. In the 10 to 20 cm level more daub, chert flakes, potsherds, and a well-used hammerstone were collected. At a depth of 20 cm, a post mold became evident by a dark stain, measuring 17 cm in diameter. From this surface the feature continued down another 23 cm with a well-defined color of the subsoil. At the 30 cm level a scraper, 5 cm long and 2.75 cm wide, was found. Not much else was noted other than another dark stain that turned out to be a rodent burrow. Another 40 cm were shoveled down, and core samples were taken without finding anything else. Then the square was filled in.

14AT445

14AT445 lies on the north end of a long hill that runs north and south. The east side of the hill has been farmed, and the west side is still in untouched native timber. On the top of this hill, next to where the timber starts, the author has found daub, potsherds, and stone tools, which point to the probability that more of the site is in the timber and has never been disturbed. The west part of 14AT445 could prove very interesting and would warrant further investigation.

EIGHT SITES IN DONIPHAN COUNTY

The east side of Independence Creek is in Doniphan County, and these sites are bounded on the east by Rock Creek, which runs from north to south before emptying into Independence Creek. They are located on a large flat field of about a quarter of a section in size, up on a second terrace with ample room on the lower level for large gardens. All the sites that have been found, except for 14DP411, seem to be facing the creeks, but 14DP411 is back in the middle of the field more by itself. It would seem that there should be more sites in a field this large, but more time will be required for a more thorough survey.

On the eight sites there, the writer has found mostly daub and pottery sherds on the surface along with a few flakes and stone tools. The single exception was found at 14AT407, a point (Figure 4f), 6 cm long and 3 cm wide, made of a shiny gray material, banded lengthwise with darker black stripes running through it. The material appears to be what Wedel (1959:524) described for the area north of Manhattan, Kansas, around Tuttle Creek dam.

> The Florence limestone, which contains abundant nodules of steel-gray chert, is an important formation in the geologic structure of the valley bluffs. Although no native quarries have been reported, this was doubtless the source of much of gray and blue-gray chert, often banded, used so widely by the Indians of northeastern Kansas in the manufacture of projectile points, scrapers, and other chipped implements.

ARTIFACTS

For all the land area included in this proposed village site and with the large amount of acres opened by cultivation, the author has found relatively few stone tools. This may be because some of these sites are known by local collectors and have been picked over regularly. The more impressive artifacts, such as arrow points and axe heads, are eagerly picked up. Hammerstones, manos, flakes, daub (Figure 5), and the small pieces of pottery (Figure 6) that have survived the farming are still there to be found if recognized.

From site 14AT438-S have come two fine axe heads, one with a three-quarter-grooved head. The other may not be a true axe head but more of a garden tool, like a hoe or spade. It is crudely grooved around a rough head that has a sharp bevel to it, not flat or level like it was used to drive stakes or to chop. The blade end is not narrow and long like an axe head but more pointed like a spade. This end is pecked and polished to a nice tool. The author has never seen one like it, but it is on the order of the stone hoes made and used at Cahokia for corn farming (Figure 7). The only projectile point found on this site is on the order of a Scallorn point and made from a translucent caramel colored material that may be Knife River flint (Figure 4d).

The surface of 14AT444 has produced a lot of daub, potsherds, and a few points. Freda Thompson found a very nice axe head, pecked and ground. It has a three-quarter groove and measures 18 cm long, 9.5 cm wide, and 4.5 cm thick (Figure 8a).

Site 14AT446 had in its surface collection daub, potsherds, and stone tools that were mostly of green stone. Manos, hammerstones, and one axe head were present. The axe, which has seen better days, is three-quarter-grooved and has a series of four small holes randomly spaced around its head. Two of the holes are fairly round—11 cm in diameter by 6 mm deep. The third hole is more oblong in shape and measures 16

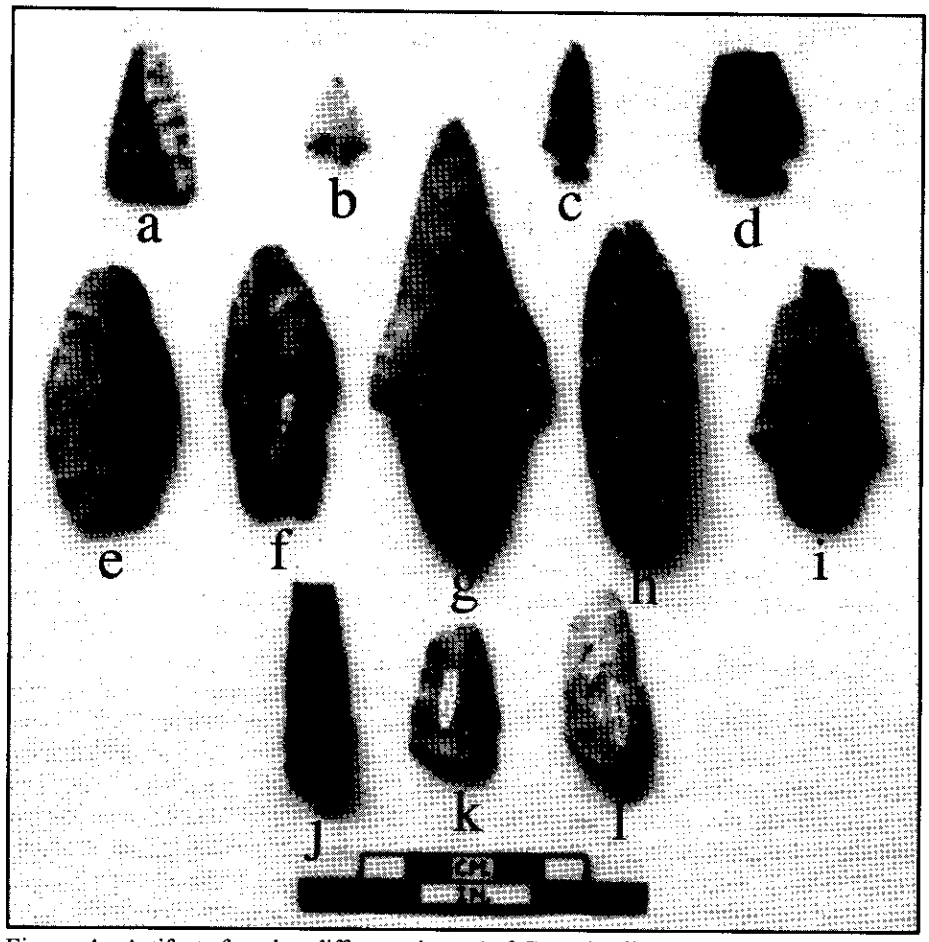

Figure 4. Artifacts found at different sites: (a-f, l) projectile points, (g) knife, (h, k, l) scrapers, (j) drill fragment.

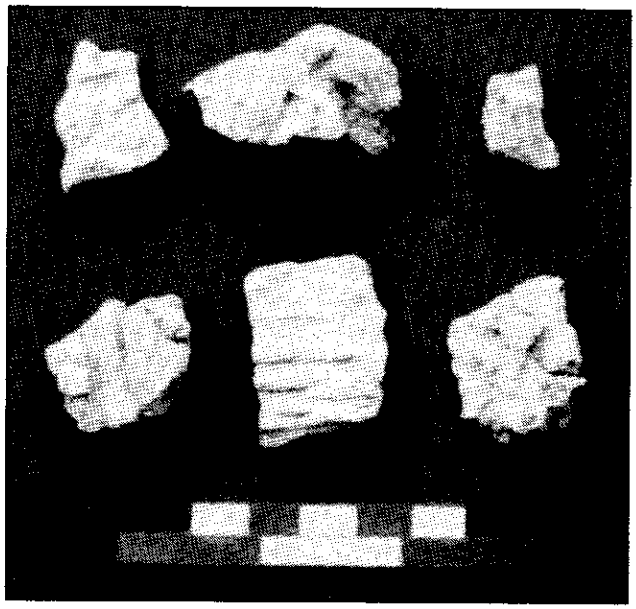
Figure 5. Chunks of daub showing grass and stick impressions. A lot of daub is still left after many years of being broken up by farming.

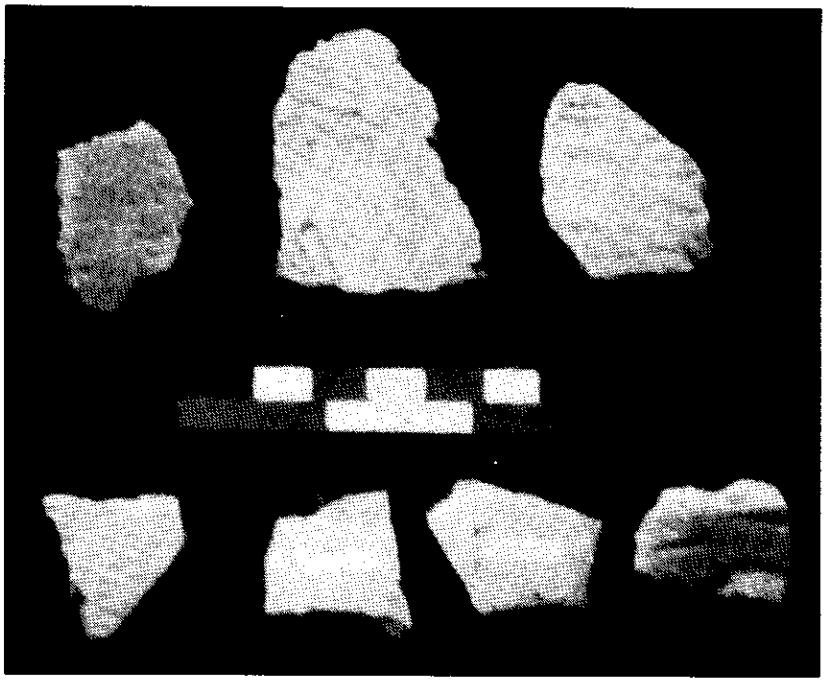

Figure 6. These are a small sample of the potsherds found throughout the valley. Some are cord roughened, and most are tempered with grit or shell.

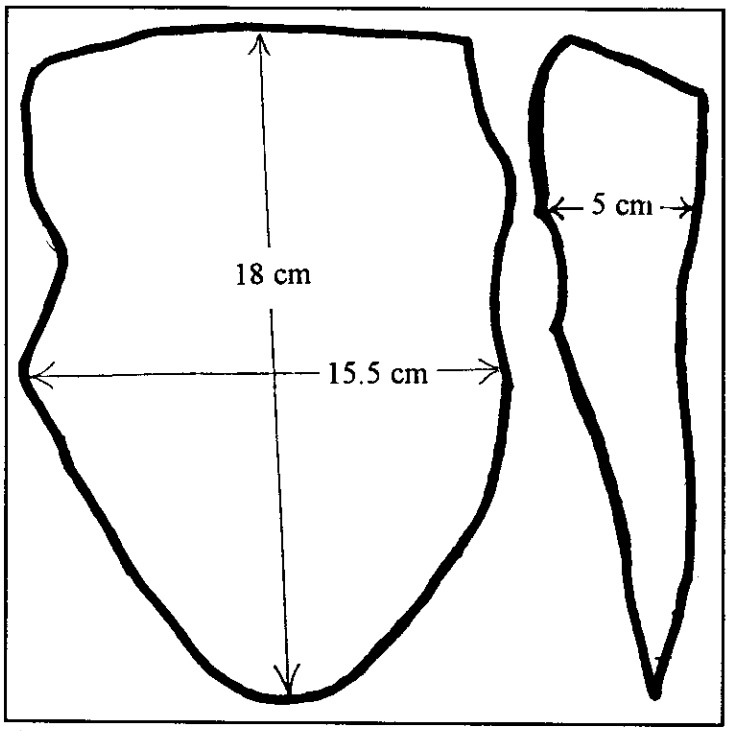

Figure 7. This stone tool was pecked and ground with a groove around the top half so that it could be hafted with a handle, possibly at 90 degrees out from a side. Fitted with such a handle, it could have been used as a garden tool, as are modern day hoes. It was found on site 14AT438-S and is depicted at one-half actual size.

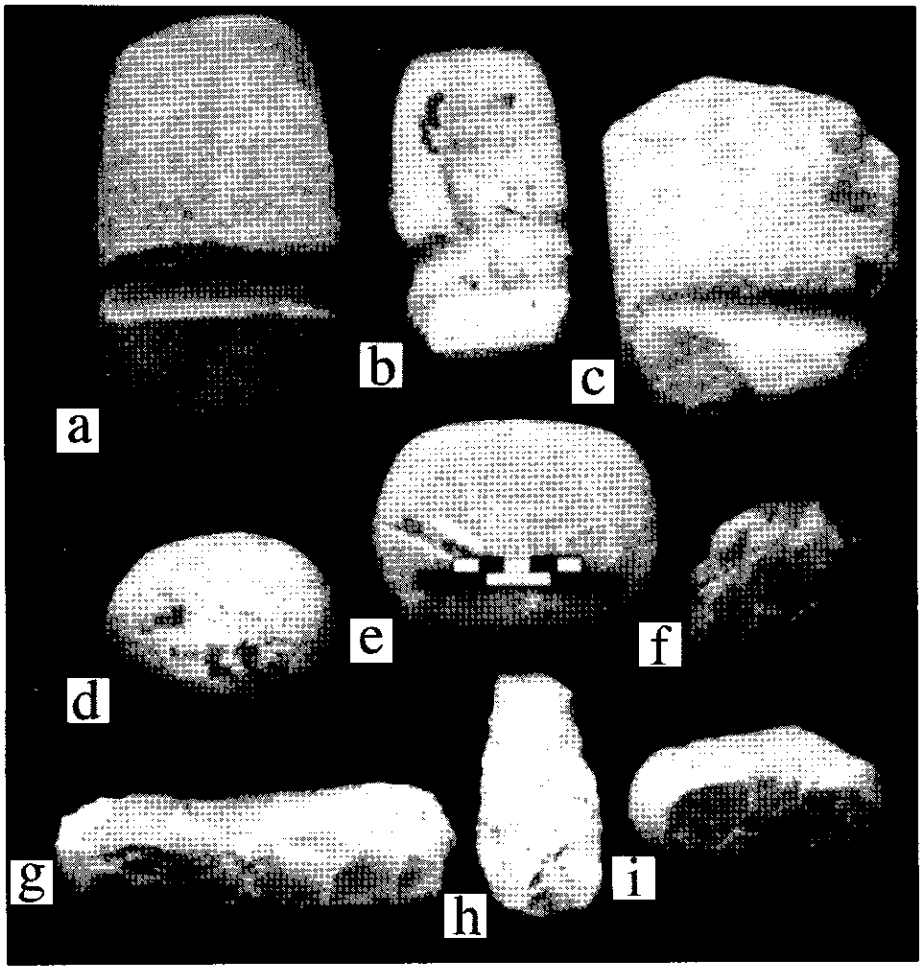

Figure 8. Specimens a, b, and c are stone axe heads of different sizes but basically the same style. D and I are hammerstones, while f is an abrader that was used to put sharp edges on points and knives. G may be an unfinished celt.

mm by 6 mm and is 3 mm deep. A fourth hole was left plugged with the material that they were all filled with until such time as a way can be found to clean it out without scoring the bottom of the hole, which may have been done on the other holes. The bottoms of the holes that were cleaned out look as if they were formed by a twisting motion, like a drill had been used or the bottom may have been scratched with a cleaning tool (Figure 8c).

Site 14AT447 is a few hundred meters south of 14AT446. Other than the daub and potsherds, the only different artifact found on the surface was a small metate of red quartzite, measuring 24 cm long, 19 cm wide, and 7 cm thick.

14AT448 is south of 14AT447 a short distance and is located on a little higher ridge of ground. It is backed up to the wall of a rocky and wooded cliff, and the front part of the site would have been close to the west bank of Independence Creek. In the early days of Atchison and Doniphan, there was a short-lived railroad line between the two towns. The construction of the railroad line probably took off part of this site, but from the lay of the land it may not have been much. This site has not produced any daub or potsherds, and the only stone tools appear to be of the Archaic period. One is a well-made alternately beveled knife with an unnotched rounded stem with a slight point like a beaver tail. The stem, measuring 3 cm long and 2.5 cm wide, is about a third of the surviving knife because the blade appears to have been resharpened a number of times, leaving no way to estimate its original length (Figure 4g). A dart or spear point was found also, but it has a more rounded stem and is unnotched, with a small part of the tip broken off. It would have

originally measured about 7 cm long and 3 cm wide at the base (Figure 4i). Found also was a scraper, measuring 7.5 cm long and 2.5 cm wide, which appears to be made of limestone (Figure 4h).

Acknowledgments. I would like to thank everyone who has helped make this article possible: the landowners in the Independence Creek Valley who gave the author permission to roam freely over their land; the professional archeologists at the University of Kansas Museum of Anthropology—Dr. Mary Adair, Dr. Brad Logan, and Dr. Alfred E. Johnson—who helped with advice and encouragement along the way; and the staff of the Kansas State Historical Society. The photos in Figures 4, 5, 6, and 8 are courtesy of Roger Ward, El Dorado, Kansas. A special thanks goes to my wife, Freda, for all the ways she has helped with this project.

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BOOK REVIEWS

Petroglyphs of the Saline River Valley, Kansas. NOVA WELLS. Monograph No. 9, American Rock Art Research Association, San Miguel, California, 1996. xvi + 64 pp., 81 tracings, 5 photographs. $10 (paper). *Reviewed by* Ralph J. Hartley, Midwest Archeological Center, National Park Service, Lincoln, Nebraska.

Increasing interest in petroglyphs and pictographs as a part of the archeological record that can be analyzed in association with material remains suggests that anthropological archeology is less stagnate than many of its critics contend. Nevertheless archeologists are often plagued with inadequate methods to explain why rock art is found in some places and not others and to what extent the marking of places was an important activity in the social environments of the past. Speculation is unending—and sometimes fun. It can also be the seed for structured creative theory. This volume, a descriptive account of some of the petroglyphs within a portion of the Saline River in Kansas, is food for speculation about social interaction and communication mediums in the environment of the protohistoric and early historic Central Plains.

In 1963, about three years after archeological investigations were completed in the to-be-inundated Wilson Reservoir (Witty 1962), Nova and Carl Wells recorded several of the rock art panels in the flood pool and vicinity. The Dakota sandstone of the Saline River valley, a tributary of the Smoky Hill River, is well suited for this form of graphic display. The paucity of rock art in the Central Plains is usually attributed to the lack of or inadequate composition of rock surfaces. That still begs the question of underlying behavioral motivation for marking places with petroglyphs—an enigmatic phenomenon observed throughout the Smoky Hills region of central and northern Kansas.

The rock art of five major site areas are described, each of which constitutes a chapter in the monograph. An additional eight petroglyph panels are more briefly described—sites that were not expected to be destroyed by inundation. In the introduction Wells explains the context of their efforts, making the reader aware that the lack of funding for adequate photographs, the use of cloth rubbings, clay casts, and decision-making about what sites to invest time in was, in large part, a function of the state of the art at the time. As noted in the foreword by A. J. Bock, no critique of these methods is warranted. In an era when thousands of archeological sites are being destroyed in North America every year through alterations to the landscape, the fact that we have any record of these petroglyph panels is a testament to the personal values of the Wells, as well as their interest in making this information readily available decades later.

The rock art is described primarily with text and sketches. Although the petroglyph sketches are reproduced from the original tracings, no scale is available. An appendix delineates dimensions of the overall figures and more specific measurements of morphological components. One fold-out is provided of "The Ruppenthal Panel" (Circle Rock Site), petroglyphs depicting several horses with riders. Unfortunately few photographs of the topographical or situational context of the sites is available. Several rockshelters with rock art, now inundated, are of particular interest. Variability in the use of rockshelters in the Central Plains is not well understood. For example, material remains from the Ringneck site, a rockshelter described by Witty (1962), suggests intermittent use for a long period in prehistory.

Who produced the rock art and what does it "mean" are often some of the first questions asked by the public as well as professional archeologists when encountering petroglyphs or pictographs. The dating of these panels to the plains protohistoric-early historic period is based on the apparent depiction of horses (some with riders), saddles, long guns, and boats or canoes. Anthropomorphic figures are highly variable. One of the most interesting is an image from the Paradise site, used for the volume cover: an apparent human with long arms and legs, head adorned with a headdress, ear lobe adornments, and "bangles" (?) on the ankles, but torso absent.

At least a dozen groups ethnohistorically documented to have used what is now central Kansas are considered by the author to be potentially responsible for producing these petroglyphs. Wells, consistent with Witty (1962:53), suggests that several groups "passing through" (page 1) this "popular area" (page 37) were responsible for the variation in morphology of both representative and abstract images. A map of the Central Plains, showing the location of the study area, the approximate location of the documented sites, and the overlapping ranges of these historic Native American groups, would have been useful to many readers.

Why these places in this river valley were chosen to be marked with petroglyphs is a question left to the reader's speculative proclivities. Wells (page 45) writes only that "Like our newspapers, the glyphs

recorded significant historical events or important happenings from the daily lives of their creators." Maybe—but this reviewer is concerned that we in the late twentieth century often assign significance to some rock art panels that far outweigh the sociocultural importance attributed to the petroglyphs by those who produced them. This does not suggest that rock art is without importance to us in understanding the social behavior of historic Native American groups. Urban gangs are well known for using graffiti to manipulate the behavior of its observers—be they members of other gangs or those associated with the graffiti makers. The social and ecological conditions under which decisions were made to produce the rock art in the Smoky Hills region is a subject that deserves attention. Attempts at delineating those conditions might also contribute to the quest for explaining some behavior and social interaction of protohistoric-early historic Central Plains groups.

This monograph is a useful companion to B. O'Neill's (1981) *Kansas Rock Art* and a contribution to the study of prehistory and history of the Smoky Hills region. In the last decade numerous books and monographs have been published that document the rock art of areas and regions of North America. This monograph makes readily available what is known about rock art long ago destroyed by inundation. It also documents the long legacy of inadvertent vandalism and the impact of cattle grazing on rock art. The American Rock Art Research Association (ARARA), the most active group in North America to encourage the study and preservation of rock art, should be encouraged to continue this publication series.

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Source Material on the History and Ethnology of the Caddo Indians. JOHN R. SWANTON with foreword by HELEN HORNBECK TANNER. University of Oklahoma Press, Norman, 1966. xxi + 332 pp., 19 plates, 5 maps, bibliography, note, index. $15.95 (paper). ISBN 0-8061-2856-9. *Reviewed by* Jim D. Feagins, St. Joseph Museum.

Source Material on the History and Ethnology of the Caddo Indians first appeared in 1942. During the 55 years since it was originally published, mostly since the 1970s, additional scholarship has been devoted to the Caddo tribes. Up until that time, except for Swanton's work, Caddo scholarship was quite minimal. Helen Hornbeck Tanner's foreword in this edition summarizes more recent research. Her comments serve to update this classic reference and increase its usefulness for contemporary readers.

The modern Caddo number approximately 3,500 and are centered near the small town of Binger, north of Anadarko in Caddo County, Oklahoma. Their ancestors flourished as a group of southeastern chiefdoms, spilling into the eastern part of the Southern Plains some 1,000 years ago. They occupied a large area within the states of Arkansas, Louisiana, Oklahoma, and Texas. By the seventeenth century the Caddo proper were composed of an alliance of four groups of people: Cadohadacho, Cahinnio, Natchitoches, and Hasinai. This is, of course, the more restrictive use of the term "Caddo" and does not include the large group of related Caddoan speakers, of which the Wichita is but one of the often cited examples.

The first third of this volume is devoted to the background and history of the Caddo tribes. Certainly the Caddo's involvement with the Ghost Dance Religion in the 1890s, their encounters with De Soto in 1541, and other aspects of their history will be of interest to many anthropologists. However, this reviewer will leave that portion of the volume for the historians, especially the ethnohistorians, to discuss.

In the main part of the book, Swanton presents the Caddo culture as described by the early French, Spanish, and later English-speaking explorers. He translates the French and Spanish sources into English and organizes portions of these primary references into various topics. Thus, in conjunction with the table of contents and the index, the volume is a quite handy research tool. Many aspects of Caddoan social, religious, and material culture are discussed. Swanton's careful explanations weave together quotations from various primary sources on such topics as birth and infancy, marriage, division of labor between the sexes, clans, terms of relationship,

government, feasts, games, ceremonies used when meeting strangers, punishments, war, burial and beliefs regarding the fate of the soul, other religious concepts, medicine men and medical practices, and religious ceremonies. Under "material culture," a special concern of archeologists, one can find the following topics: vegetable foods, animal foods, salt, clothing and personal adornment, houses, and manufactures. For example, if one wants to research the descriptions of early Caddo houses, he would find that the earliest descriptions are from French explorers during the late 1600s. Father Anastasius states,

> Their cabins are fine, forty or fifty feet high, of the shape of bee-hives. Trees are planted in the ground and united above by the branches which are covered with grass. The beds are ranged around the cabin, three or four feet from the ground; the fire is in the middle, each cabin holding two families [Cox 1905, vol. 1, p. 232] (page 148).

Joutel, with far more length and detail, describes them as "... round, in the shape of beehives or rather like big haystacks, ... they are covered with grass from bottom to top ... [Margry, 1875-1886, vol. 3, p. 345]" (p. 148). Other primary sources explain how they were manufactured and the social and ceremonial customs accompanying their construction. Houses for special functions are also described. Seven pages of fairly small print record the observations of various people who actually saw these grass houses, some even saw them being built. Of course, many other aspects of Caddo material culture are described by these "been there and (sometimes) done that" observers. Archeologists interested in the prehistory and history of the Caddo and their kin will find useful ethnographic information in the volume to compare with archeological data from the field.

The last portion of the volume (pages 419-442) contains the entire text of the three principal documents used by Swanton: *Letter and Report of Fray Francisco Casafias de Jesus Maria to the Viceroy of Mexico* (Aug. 15, 1716), *Letter of Fray Francisco Hidalgo to the Viceroy of Mexico* (Nov. 4, 1716), and extracts from the *Crónica de la Provincia Franciscana de lost Apóstoles San Pedro de Michoacán* by Fray Isidro Felix de Espinosa under the editorship of Nicolas Leon. They are published for scholars, those who wish to read them in their original Spanish.

John Swanton of the Smithsonian Bureau of American Ethnology wrote many works on the American Indian. His Source Material on the History and Ethnology of the Caddo Indians is a well researched volume that has been and will continue to be quite useful to anthropologists, historians, and individuals interested in Native Americans. The University of Oklahoma Press is to be commended for making it more accessible to new generations of researchers. It may be obtained from the press at 4100 28th Ave, NW, Norman, OK 73069-8218 or ordered through your local book store.

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Mythology of the Lenape: Guide and Texts. JOHN BIERHORST. University of Arizona Press, Tucson, 1995. 147 pp., notes, bibliography, index. Hardcover $36.00 (hc); Paper $19.95. *Reviewed by* Rodney Staab, Grinter Place Museum, Kansas State Historical Society

In America the discipline of anthropology is ordinarily divided into the four distinct fields: archeology (the study of the surviving material culture of a people who may now no longer exist as a people), linguistics, physical anthropology, and ethnology. Each field merits specialization unto itself, so much so that students with years of experience in one field may rarely or never stray into another field. It is nonetheless well to be aware, if only in passing, of significant developments in related fields.

In Kansas the study of anthropology is usually restricted to inquiries into the Native Americans who lived here prehistorically. It is a brave archeologist who will equate any particular Middle Ceramic cultural horizon with any historically known nation or tribe. However, most Late Ceramic archeological complexes can be identified with known tribal cultures with a high degree of certainty. Beginning about 1825, as a result of the Jacksonian era of Indian Removal, about 10,000 Native Americans, collectively representing perhaps a

score of distinct tribes, were relocated to reservations in what is now Kansas. About 90 percent of these people were relocated elsewhere in the years from 1854 to 1871. The ethnology of all of these so-called emigrant tribes of Kansas properly belongs to the study of anthropology in Kansas.

One of the most recent products of ethnological scholarship bearing on one of the state's temporary Native American tribes is John Bierhorst's *Mythology of the Lenape: Guide and Texts*. The Delaware Indians, whose more appropriate self-designation is the Lenape, lived on a reserve stretching from the Missouri and Kansas rivers well into western Kansas. By contemporary description this reserve took in portions of Wyandotte, Leavenworth, Jefferson, Jackson, and Shawnee counties, with an "outlet" 10 miles in width extending westward into Mitchell County. This "outlet" was for the sake of those Delawares who asked for this land in hopes that it would give them a safe passageway to the buffalo hunting grounds. By law these boundaries were meant to prohibit Cheyennes or Pawnees or any other tribesmen from hindering them in their hunts. Most of the Delawares, however, lived in a series of home sites stretching from just a few miles north of Lawrence all the way to the Missouri River. In the middle 1940s after the Wyandot Indians moved onto their own reserve in what is now Wyandotte County, the eastern edge of the Delaware reserve was defined as what is now 72nd Street in Wyandotte County.

The first European observations of Delaware or Lenape Indians date from the 1520s, when the Lenapean peoples, perhaps 10,000 in number, lived in what are now New Jersey and much of metropolitan New York City. A long history of compromises and retreats brought the Delawares into eastern Pennsylvania, then western Pennsylvania, then Ohio, Indiana, Missouri, and, by about 1830, Kansas. By about 1868 most members of the tribe had moved with great reluctance to what is now Oklahoma in the vicinity of Bartlesville. The majority of Delawares live in that region today.

As early as the 1650s and into the 1990s, Euro-Americans have heard, and Lenapes have recounted, tales from Lenapean mythology. In this volume Bierhorst has synopsized and partly reprinted the 218 known tales that represent this mythology.

Following a preface, a note on orthography (the spelling of words), and an Introduction, the book is divided into the two major subheadings of Guide and Texts. The Guide is further subdivided into four parts: Thematic Outline, Story Abstracts, Stories of Uncertain Origin, and Comparative Notes. Each of these parts is briefly described below.

For beginners the Introduction is the most valuable portion. Here Bierhorst relates that a Creator, known by a number of terms, presided benevolently over the spirit world of the Delawares, while an Evil Spirit, called *Mahtantu* by most Lenapes, functioned as a Devil. Various tales hold that the Creator fashioned the world out of mud and created humans and useful plants, while *Mahtantu* created bats and poisonous plants. The Creator also taught the Delawares their customs and rites. Stories about the Creator have flourished and survive to this day among the Delawares, while tales of *Mahtantu* have dwindled and disappeared. Another very popular supernatural character is *Wehixamukes* (weh-hee-KHAM-oo-case), sometimes known as Crazy Jack. Occasionally termed the "Delaware Sampson," Crazy Jack is a wise fool who takes quite literally what other people tell him to do and ends up in absurd circumstances. In one story while hunting with some associates, he wounds himself and is told to "tie bark on it," as a person might be instructed to put gauze and tape over a bad cut. But his associates return to find Crazy Jack high in a tree with his hand bound to a small tree limb. "You should have told me so!" is his recurrent reply.

The Introduction also presents the lesser characters in the Delaware pantheon. There is the Animal Master, or Mask Being, who controls the availability of game animals. There is another smaller Game Master, who rides on the back of a deer and herds game away from hunters; sometimes this Game Master appears unexpectedly to help someone in distress. Mother Corn oversees the growth of this most important food crop. The very presence of Snow Boy signals danger, while the Sun is generally a helpful supernatural being. The Thunders are thought of as birds; sometimes they do battle with the Great Horned Snake. This latter character lives underwater and displays an unhealthy interest in sex, sometimes taking the form of a man and unlawfully impregnating females. There is a Great Naked Bear, who is all but impossible to kill. Finally, there is a cannibal ice giant, who eats misbehaving people. Like the "bogeyman," stories about this ice giant are told to make children behave. Moreover, the Introduction describes the story-telling event and how, since the 1650s, these tales have moved from performance into literature.

The Thematic Outline summarizes in seven pages the entire panorama of Lenapean mythology. The aforementioned characters pop in and out of these 218 tales in ways that are, of course, greatly unfamiliar to us, but which would have been completely understandable to the original Delaware audience. In this outline Bierhorst has cross-referenced the many appearances of these characters and grouped tale types

together to make this world comprehensible at a glance. Here, too, through the creative use of typography, Bierhorst indicates the distribution of the tale type. An underlined tale is exclusively Delawarean, a CAPITALIZED tale indicates that it is of a type found elsewhere in the Americas (or is even of global distribution), and a tale that is neither underlined nor capitalized indicates that the tale derives from only one narrator.

The Story Abstracts are presented in chronological order, giving the reader yet another way of looking at how this corpus of texts survived. The date of collection and the date of publication are also given, as well as the name of the collector, the place of collection, and the identity of the informant. Shorter texts of only a sentence or two are offered in full. Otherwise, the length of the text in words is offered. Eighteen tales are reproduced in the Texts section in their entirety for the first time. These 18 tales are from the recently opened M. R. Harrington papers, located as of 1995 at the National Museum of the American Indian in New York, and the Truman Michelson papers in the Smithsonian Institution, hitherto available only to specialists. Following the Story Abstracts are two pages of Stories of Uncertain Origin, stories which might, or might not, derive from an authentically Delaware origin.

It is in the Comparative Notes section where Bierhorst really performs a great scholarly service for fellow students of Delaware history. Bierhorst is the author of several volumes on the mythology of North and South America and is a specialist in Aztec studies. In *Mythology of the Lenape*, he offers a catalogue of the motifs in these Lenapean tales with particular reference to the appearance of these motifs in other Algonquian and Iroquoian tales. Since the aborginal Delawares lived in the Northeast, surrounded by other Algonquians (such as Nanticokes, Mahicans, Narragansetts, and further afield, Shawnees and Crees, among others) and Iroquoians (such as Senecas, Cayugas, Wyandots, and further afield, Cherokees and Tuscaroras, among others), it can reasonably be expect that many of these tales would appear, with variations, in the mythologies of these neighbors; and they do. But as archeologists are fond of stating, absence of evidence is not evidence of absence. Unfortunately a great deal—in some cases virtually all—of the information about the spiritual worlds of neighboring tribes was never recorded. Bierhorst surveys the entire range of North American mythology, delving as well into Central and South American lore, to find parallels with the Delawarean examples. Reflecting the Christianity of most Europeans the Lenape encountered, a few of the tales are biblical in origin.

Some of the tales may have a more overtly historical source. Eight of the tales state that a 12-month earthquake was inflicted upon the Lenapes by the Creator as a punishment for having abandoned their Big House religion. "The earth continually shook. Trees sank down. Directly big pools of water could be seen," one of the tales reports. The range of eyewitness descriptions preserved among these tales very nearly matches the testimony on the year-long 1811-1812 New Madrid earthquake along the Mississippi River, still the greatest quake ever to shake the earth beneath the United States. During those very years several hundred Delawares were living near Cape Gerardeau in the New Madrid region of Missouri at the very epicenter of the disturbance, although the majority of the Lenapean peoples were living hundreds of miles from this region. It is hardly surprising that such an astounding calamity should make its mark in the folklore of the Delawares, and sure enough, all eight tales were recorded well after this epochal event.

Of the 218 tales seven were recorded in Kansas—four by the pioneer ethnologist Lewis Henry Morgan and three by the missionary Clara Gowing. Notwithstanding Bierhorst's encyclopedic erudition, it is likely that other examples of Lenapean mythology remain to be discovered and added to this collection. In fact two tales not in Bierhorst's volume may be found on page 259 of volume 16 of the *Kansas Historical Collections* (1923-1925). In early May 1843 the missionary William Patton visited the Delaware Methodist Mission in present Wyandotte County and in passing recorded these two tales. The first concerns the male god who lives in the north and whose breath causes cold winds and snow. He is married to the goddess who rules over warm summer weather. "This god and goddess were often waging war with each other," Patton recorded, adding that the prevailing deity determined the weather for that day. The second tale holds that in the fall the Indians would gather the first ripe corn and offer it to this very goddess of the south; this explains the origin of the Green Corn dance.

Bierhorst's book is a compact, tightly written opus of the very highest quality, keyed to a much larger body of studies in the same field. At the same time it is a book of enchantment, offering a crystal-ball gaze into a world of ogres, goddesses, unreasoning monsters, and mystically perceived sadness, all vibrantly springing from some of the oldest strata of human knowledge still extant in North America. It is a window into another world, unthinkably old that is nevertheless strangely, distantly our own.

ABOUT THE AUTHORS

Susan E. Butler
Archeology Office, Kansas State Historical Society, 6425 SW 6th Avenue, Topeka, Kansas 66615-1099

Susan is the KSHS Archeology Lab Director for the Highway Archeology Program. She received her B.S. degree in anthropology from Michigan State University and is about to complete her Master's degree at the University of Kansas. Her thesis, entitled "Dismal River and the Southwest: A Diffusion of Technology or Goods?," involves a thin-section analysis of micaceous ceramics from a number of Dismal River sites.

Faye and James A. Clifton
Ethnohistory Associates, 3326 Donnegal Avenue, Kalamazoo, Michigan 49006

Faye and Jim Clifton are a wife-husband team who are celebrating their 50th wedding anniversary this year. Faye was educated at Antioch College, the University of Chicago, and the University of Kansas; Jim, at the University of Chicago and the University of Oregon. Faye's degree was in political science, and she worked for years in city planning before becoming a productive quilter. With her prompting, help, and support, Jim has published numerous books and essays, mainly dealing with the Indians of the Northeast. Between 1962 and 1968, while Jim was on the anthropology faculty at K.U., they conducted anthropological research with the Kansas Potawatomi. Faye's essay resulted from this study. Our thanks to the National Science Foundation for their support of this research.

Jim D. Feagins
13213 Bennington Avenue, Grandview, Missouri 64030

Prior to Jim Feagins becoming an Archaeological Research Associate with the Saint Joseph Museum, he served in the same capacity with the Kansas City Museum (1976-1990). Also, after 30 years of teaching science in the Grandview, Missouri, school system, he retired from that profession in 1995. He received a B.S. degree from Pittsburg State University in 1965 and a M.N.S. degree from the University of Oklahoma in 1973. Active in promoting archeological education, he is President Emeritus of the Missouri Archaeological Society. He has also served as a vice-president of the Kansas City Archaeological Society and is currently on the board of directors of the Missouri Association of Professional Archaeologists. His primary area of research interest is the prehistory of the eastern Central Plains with a focus on the ceramic periods.

Roger T. Grange, Jr.
301 Beachway Ave., New Smyrna Beach, Florida 32169

Roger Grange is Professor Emeritus of Anthropology at the University of South Florida. He received his Ph.B. in 1948 and his M.A. in 1952 from the University of Chicago. He was awarded the Ph.D. in 1962 at the University of Arizona with a dissertation on Pawnee ceramics. He served as an Assistant in Anthropology at the Field Museum in 1954-55. He was employed at the Nebraska State Historical Society from 1955 to 1964 as Curator at Fort Robinson, then as Curator of Anthropology, and finally as Museum Director. He joined the faculty at the University of South Florida in Tampa in 1964, where he established the Department of Anthropology. He retired in 1994. In addition to his earlier research in Plains archeology, he has excavated historic sites in Newfoundland and Quebec and at Forts Michilimackinac and Mackinac in Michigan. He continues his Pawnee research and in 1995 and 1996 directed excavations at Fort Mackinac.

Lucien M. Hanks (deceased) and Jane R. Hanks, editor
R.R. 1, Box 30, North Bennington, Vermont 05257-9703

Lucien M. Hanks (B.A., University of Wisconsin; Ph.D., Columbia University) started out in the field of social psychology, then turned to anthropology. His first field work was with the Siksika Blackfoot in Canada. Interrupted by World War II, he was sent by the Office of Special Services (OSS) to Burma. His work there led,

after the war, to a long-term affiliation with Cornell University's Southeast Asia Program in Thailand, where he worked both in the lowlands and with the tribes on the northern Burma-Thailand border. From 1942 until retirement, he also taught at Bennington College, Vermont. He died in 1988.
Jane Richardson Hanks (B.A., University of California at Berkeley; Ph.D., Columbia University) wrote her thesis on "Law and Status among the Kiowa Indians of Oklahoma," based on field work there. After teaching several years at New York's State University at Albany, she joined Cornell University's Southeast Asia Program. Her work in Thailand has focused on gender and nutritional studies in the lowland and, among the non-Thai tribes in the highlands, on their histories, their relationships to each other, and to the Thai government. She is a founding member of the International Conference on Hani-Akha, establishing relations between the Hani of Yunnan and the Akha of Southeast Asia.

Ralph J. Hartley
Midwest Archeological Center, National Park Service, Room 474, Federal Building, Lincoln, Nebraska 68508

Ralph Hartley received an M.A. in Anthropology and Ph.D. in Geography from the University of Nebraska-Lincoln. He has worked for the National Park Service, Midwest Archeological Center since 1978. His interest and research in rock art stems from his work in the intermountain west since that time.

John Romine
Route 5, Box 158, Paola, Kansas 66071-8935

The Kansas Archeology Training Program excavation of the Jotham Meeker site in 1985 peaked John's interest in archeology. At that time he was a lithographic technician, working in Kansas City and living close to the site. Becoming a member of the KAA in 1985, he has attended most of the field schools since that time. He became interested in flotation sampling through the course offered by Mary Adair in paleoethnobotany and also the University of Kansas fall field school in 1991. When he retired from the printing industry in 1993, he returned to academia at the University of Kansas. He has extended his knowledge of flotation by separating samples from the 1992 and 1993 excavations at the Sharps Creek site and the 1994 KATP at the Killdeer site. He is past president of the Kansas City Archaeological Society.

Rodney Staab
Kansas State Historical Society, Grinter Place, 1420 South 78th Street, Kansas City, Kansas 66111

Rodney Staab is a member of the Kansas Anthropological Association and past president of the Kansas City Archaeological Society. He is a descendant of families that have farmed or resided in the Saline and Smoky Hill valleys for over 115 years. Rodney is presently a Kansas State Historical Society employee and curator of the Grinter Place State Historic Site in Kansas City, Kansas.

Robert L. Thompson
817 College Street, Atchison, KS 66002

Bob is a member of KAA, a charter member the Kanza Chapter, and a member of the Arkansas Archeological Society, Missouri Archaeology Society, and Oklahoma Anthropology Society. He has located and recorded a number of sites in Atchison, Leavenworth, and Riley counties. He has worked on field crews for several archeological contractors.

INFORMATION FOR AUTHORS

Manuscripts are actively solicited for *The Kansas Anthropologist*. Articles should have a relationship to Kansas anthropology (archeology, ethnography, ethnohistory, cultural/social anthropology, physical anthropology, etc.). All manuscripts must be the original, unpublished work of the authors. The varied readership of the journal should be kept in mind when preparing papers. **Jargon should be avoided**. The style authority is *American Antiquity* (see Volume 57, Number 4, 1992). Professionals are expected to submit their manuscripts in this form; others who are not familiar with the *American Antiquity* style guide will receive editorial assistance. Illustrations are encouraged; at least two or three should be included if possible. All illustrations must be of reproduction quality and should be designed to fit within 6 x 8.5-inch margins, including caption. If protected by copyright, this must be noted so permission for use can be obtained. If IBM compatible computer technology is available, please submit papers on diskette in WordPerfect 5.1 or 6.1, as well as in single hard copy. Manuscripts will be reviewed by the editorial committee who will judge whether or not articles are appropriate and what revisions may be necessary for publication. Outside reviewers may be used. Five reprints will be provided free of charge to the author of each major article.

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Virginia A. Wulfkuhle, Editor
Archeology Office
Kansas State Historical Society
6425 Southwest 6th Avenue
Topeka, Kansas 66615-1099
Telephone: 785-272-8681, ext 268; FAX: 785-272-8682; e-mail: vwulf@hspo.wpo.state.ks.us